

AMERICAN

RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

ASSISTANT EDITORS:

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CHARLES T. JAMES, *For Manufactures and the Mechanic Arts.*

M. BUTT HEWSON, *For Civil Engineering.*

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ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.

Room 12, Third Floor,

No. 136 Nassau Street.

To the Proprietors of Rolling Mills and Iron Works.

THE Undersigned—Proprietors of Townsend's Furnace and Machine Shop, Albany—are extensively engaged in the manufacture of Machinery and fixtures for Iron, and Copper Rolling Mills, and Iron Works. Having paid particular attention to the manufacture of *Rolls* (Rollers), both *chilled* and *dry-sand*, they feel confident that they can execute orders for such castings in a satisfactory manner. And to give assurance of this, they beg leave to refer to the following named persons, proprietors and managers of some of the most extensive rolling mills in the country, viz: Jno. F. Winslow, J. Tuckerman, H. Burden, W. Burt, J. & J. Rogers, Salsus & Co., J. B. Bailey, L. G. B. Cannon, Hawkins & Alwater, etc.

F. & T. TOWNSEND.

Albany, August 18, 1849.

FARMERS! ATTENTION!!

John Mayher & Co's
NEW AGRICULTURAL WAREHOUSE
AND SEED STORE.

107 WATER STREET, NEW YORK.

Where they have for Sale, the largest and most complete assortment of Farming Implements, ever offered for sale in this city—all of which they will sell 10 per cent. Cheaper than the same kind of Goods can be bought at any other house in the city. Our Goods are all Warranted to give satisfaction.

FARMERS wanting to purchase, will please call and examine our *Stock* before buying elsewhere. Among our assortment may be found the Celebrated Highest Premium Eagle Ploughs! together with all the most approved Ploughs now in use.

Also—Horse Powers, Threshing Machines, Fan Mills, Corn Shellers, Straw Cutters, Corn Mills, Seed Sowers, Churns, Ox Yokes, Ox Scrapers, Hay Rakes, Horse Rakes, Patent Chain Pump (that never freezes nor rusts), and other Pumps; in fact we have everything for Farming Purposes—together with Guano, Bone Dust and other Fertilizers.

JOHN MAYHER & CO.,
197 Water st., N. Y.

February 9, 1850.

N.B.—J. M. & Co. also continue their Old Stand, at 195 Front street, near Fulton Market.

Machinery Oil.

WE the undersigned are now manufacturing an oil intended for the use of Railroads, Steamers and Manufacturing establishments. It has been in use several months and has given very general satisfaction. Our price is uniformly 70 cts. per gallon. Enquiries or orders attended to promptly. Address

ROBBINS, LANGDON & CO.,
133 Water street, corner Pine, New York.

CERTIFICATES.

Providence, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: We have given your machine oil a thorough trial, and find that it possesses all the qualities that we could wish, as it works better than any sperm oil we have ever used. Our shafts that required oiling four times a day with the best sperm oil that we could get, work equally as well by the application of your oil twice a day, and your oil stands cold weather much better than any oil we have ever used. Our engineer having had years' experience in running and making engines, we put great confidence in his judgment, and he gives it as his opinion that your oil is fully equal to if not better than any he ever used; and we shall soon give you an order for more, as we do not want any other kind of oil as long as we can get yours.

Very respectfully yours,
JACKSON, CLARK & CO.

Bridgeport, Nov. 7th, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: After about three months' trial of your oil, I have come to the conclusion to use it entirely on the engines on the New York and New Haven and the New Haven and Northampton Railroads for the following reasons:

1. It wears quite as long as sperm oil.
2. So far as I have tried it, it keeps the Journals equally cool as sperm oil.
3. I have no complaint from our men about cleaning the engines, and presume it is equally as easy to clean an engine by using your oil as it is in using sperm oil.
4. I can see no reason why it is not equal to the best of sperm oil for lubricating machinery.
5. There is in my opinion a very great saving to all parties in using your oil for lubricating machinery.
6. I believe it will stand cold weather better than any sperm oil.

Very respectfully yours,
R. B. MASON, Supt. N.Y. & N.H. Railway.

Steamer Bay State, Oct. 22d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In answer to your request for my testimony as to the machinery oil manufactured by you, I will say that I have used it for some time past on the Bay State, and am perfectly satisfied that your statement to me of its good qualities, is correct. As far as its lasting properties go, it wears equally long as sperm oil, runs perfectly free, and has no appearance of thickening. As seeing is better than hearing, I would recommend you to send your friends on board our boat, and they can then, by ocular demonstration, judge for themselves. Yours respectfully, JOHN GRAY,

Engineer of Steamer Bay State, Pier 3, N.R.

Steamboat Knickerbocker, Sept. 22, 1849.

Gentlemen: Mr. Hall, Agent of the Norwich and New London Steamboat Co., placed in my hands some of your machinery oil, which he desired me to use on the engine and other machinery, which I have done, and was so much pleased with the working, that I recommended the owners to give you their orders.

I have been using the article since August 19, and with perfect satisfaction, and I am well satisfied that your oil is as good as the best of sperm for lubricating machinery. I am yours very respectfully,

SAMUEL CARTER,

Engineer of Steamboat Knickerbocker, Pier 18, N.R.
To Messrs. Robbins, Langdon & Co.,
Oil Merchants, 133 Water street, New York.

Steamboat Worcester, N. York, Oct. 15, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I beg to acknowledge the receipt of your letter requesting my opinion as to your oil for machinery, which I had not time to reply to previous to my return to Norwich. I have been using your oil on the engine and machinery of the Worcester with perfect success, and have much pleasure in testifying as to its good qualities. In my opinion, the journals keep cooler with your oil than with sperm, and it wears equally well. Should you at any time wish to refer to me as to your oil, I beg you will do so without hesitation. Yours respectfully, JAS. CROOKER.

Engineer Steamboat Worcester, Pier 18, N. R.

New York, August 3d, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I received your letter in regard to your oil for machinery, which I handed to our engineer, and have much pleasure in sending you an extract from his letter to me on the subject: "I have applied the oil sent me upon our hot journals and cylinders, and find that they keep cooler with it than with sperm oil. I cannot find any fault with the oil, although I have watched it carefully. I have also tried it against an equal quantity of sperm oil, and find it wears quite as well." You are quite at liberty to show this extract to your friends, and shall be happy to give any further certificate you may require. WM. RIDER,

Treasurer Union India-rubber Co., 19 Nassau st. N.Y.

New York, March 22d, 1850.

Messrs. Robbins, Langdon & Co.,

Gentlemen: I have been using your machinery oil on the engine and other machinery of the Steamer Southerner running from this to Charleston, and find it equal to sperm oil. I shall continue the use of the same, and you are at liberty to refer to me at any time. Yours respectfully, DAVID N. MAXON,

Chief Engineer Steamer Southerner.

Steamboat C. Vanderbilt, N. York, Oct. 11, 1849.

Messrs. Robbins, Langdon & Co.,

Gentlemen: In reply to your inquiries respecting the qualities of your machinery oil, I am happy to inform you that I have been using the article sent me for some time past, not only on the engine but on all other machinery connected with it: and from a careful and close examination, I am well satisfied that your oil is as good as the best of sperm oil for lubricating machinery. I have recommended Mr. Lockwood the agent of the company, to give you their orders. Yours respectfully, JAMES BAKER,

Engineer Steamboat C. Vanderbilt, Pier 3, N.R.

Brooklyn, August 29, 1849.

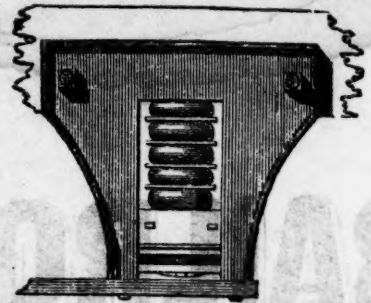
Messrs. Robbins, Langdon & Co.,

Gentlemen: Your letter of the 29th was received, and I am happy to inform you that I have used your machinery oil throughout my establishment, and I am still of the opinion that it is as good as the best of sperm oil for lubricating machinery. I should be pleased at any time to have your friends witness the working, and I am sure, after once doing so, will give you their orders. Please send me another cask by the evening of the 3d, and by so doing you will much oblige,

W. M. BURDON, Manufacturer of

Steam Engines and other Machinery, 102 Front st.

FULLER'S PATENT INDIA RUBBER SPRING.



THESE SPRINGS ARE THE CHEAPEST, the lightest and most durable of any yet known. They are easily applied to new or old cars, and there is small possibility of any accident occurring to them. Other parties through Mr. Ray set up claims to an India Rubber Spring which, though the same in principle, is very inferior in its working and durability. Actions are in progress for an Infringement on Fuller's Patent against parties using that Spring.

The superiority of Fuller's Spring over that claimed by Mr. Ray is fully established and has frequently been testified to. The following are from gentlemen who have had much experience with both Springs.

"It will afford me pleasure to recommend your springs to the companies in this region, in preference to Ray's which I am confident are inferior in mechanical arrangement to yours." JOHN M'RAE,
Engineer S. Carolina R. R., Charleston.

"I do not hesitate to allow you to say that I concur in Mr. M' Rae's opinion that Ray's springs are inferior in mechanical arrangement to Fuller's. I repeatedly expressed that opinion long before Mr. M' Rae had seen your springs (as I believe) and entertain it still." WM. PARKER,
Gen'l Supt. of Baltimore and Ohio R. R.

Office of Sup't Norwich & Worcester R.R. Co. }
December 26, 1849. }

"I most fully concur in the opinion of Jno. McRae, Engineer of S. Carolina Railroad, that 'Rays Springs are inferior to Fuller's Springs,' and shall with pleasure recommend them to all Railroad Companies for adoption. I have used both springs on this road and have no hesitation in saying that I should in all cases prefer Fuller's Spring."

SAM'L H. P. LEE, JR.,
Supt and Engineer.

Office B. & P. R. R. Co., }

Boston, 20th December, 1849. }

"This company have cars fitted up with both Ray's and Fuller's 'Metallic India Rubber Springs,' and I do not hesitate to say that Fuller's arrangement is very much superior to Ray's." W. RAYMOND LEE, Supt.

The following result has been obtained by experiment upon one railroad.
A set of Trucks fitted with Steel Springs cost \$190-77 and weigh 2355 lbs. The same with Fuller's Springs, 131-71 " 1911 lbs.

Difference, \$59-06 " 444 lbs.

Not only is there an advantage in the cost, but owing to the great reduction in weight, the car can be made lighter throughout, and so an enormous saving in weight may be effected in a Train.

AGENTS.

G. M. KNEVITT, 38 Broadway, N. Y.,
JOHN THORNLEY, 110 Chestnut St., Philad.
The BOSTON BELTING CO., Milk st., Boston.
January 2, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 25, 1849.

IRON BRIDGES, BRIDGE & ROOF BOLTS,
etc. STARKS & PRUYN, of Albany, New York,
having at great expense established a manufactory with
every facility of Machinery for Manufacturing Iron
Bridges, Bridge and Roof Bolts, together with all kinds
of the larger sizes of Screw Bolts, Iron Railings, Steam
Boilers, and every description of Wrought Iron Work,
are prepared to furnish to order, on the shortest notice,
any of the above branches, of the very best of Amer-
ican Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several
Iron Bridges for the Erie Canal, Albany Basin, etc.,
—and a large amount of Railroad Bridge Bolts, all of
which have given the most perfect satisfaction.

They are permitted to refer to the following gentle-
men:

Charles Cook, Nelson J. Beach, Jacob Hinds, Willard Smith, Esq., Messrs. Stone & Harris, Mr. Wm. Howe, Mr. S. Whipple,	Canal Commissioners of the State of New York. Engineer of the Bridges for the Albany Basin. Railroad Bridge Builders, Springfield, Mass. Engineer & Bridge Builder, Utica, N. Y.
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January 1, 1849.

**TO RAILROAD COMPANIES AND BUILD-
ERS OF MARINE AND LOCOMOTIVE
ENGINES AND BOILERS.**

FASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 1 in calibre and 2 to 12 feet long,
capable of sustaining pressure from 400 to 2500 lbs.
per square inch, with Stop Cocks, T. L., and
other fixtures to suit, fitting together, with screw
joints, suitable for STEAM, WATER, GAS, and for
LOCOMOTIVE and other STEAM BOILER FLANS.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

To Railroad Companies, etc.



The undersigned has at last suc-
ceeded in constructing and securing
by letters patent, a Spring Pad-lock
which is secure, and cannot be
knocked open with a stick, like other
spring locks, and therefore particu-
larly useful for locking Cars, and
Switches, etc.

Companies that are in want of a
good Pad-lock, can have open samples sent them that
they may examine and judge for themselves, by send-
ing their address to

C. LIEBRICH,
46 South 8th St., Philadelphia.
6m*

Mattewan Machine Works.

THE Mattewan Company have added to their Ma-
chine Works an extensive LOCOMOTIVE ENGINE
department, and are prepared to execute orders for Lo-
comotive Engines of every size and pattern—also Tenders,
Wheels, Axles, and other railroad machinery, to
which they ask the attention of those who wish such
articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving
Cotton, Woollen, or other Mills, can be had on favorable
terms, and at short notice.

COTTON AND WOOLLEN MACHINERY,
Of every description, embodying all the modern im-
provements, second in quality to none in this or any
other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as
this company has probably the most extensive assort-
ment of patterns in this line, in any section of the
country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting and
Drilling Machines, of the most approved patterns, to-
gether with all other tools required in machine shops,
may be had at the Mattewan Company's Shops, Fish-
kill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, Agent.

HEAD QUARTERS FOR RUBBER GOODS.



The Union India Rubber Company,

MANUFACTURERS AND DEALERS IN EVERY VARIETY OF

GOODYEAR'S PATENT METALLIC RUBBER FABRICS,

Which they offer on the most liberal terms at their Warehouse,

NO. 19 NASSAU STREET, NEW YORK.

Articles which this Company has the exclusive right to make comprise in part

Beds, Pillows, Cushions, Caps, Tents, Bottles, Tubs, Caps, Pants,	Overcoats, Leggins, Syringes, Canteens, Buoys, Maps, Sheet Gum, Tarpaulins, Life Jackets,	Life Preservers, Boat Floats, Souwesters, Gun Cases, Portable Boats, Horse Fenders, Water Tanks, Army Goods, Navy Goods,	Mail Bags, Breast Pumps, Saddle Bags, Clothing of all kinds, Carriage Cloth, assor. Hospital Sheetting, Mattress Covers, Bathing Caps, Baptismal Pants,	Camp Blankets, Travelling Bags, Wading Boots, Horse Covers, Piano Forte Covers, Railroad Gum, Hose, all kinds, Shower Baths, Chest Expanders.
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Together with all new applications of the Patent Rubber, which with Boots and Shoes, Packing, Machine
Belting, Suspenders, Gloves and Mittens, Tobacco Wallets, Balls, Baby Jumpers, Elastic Bands, etc., etc.,
will be sold to the Trade at Factory prices.

*. All orders for special articles to be manufactured, should be accompanied with full descriptions and draw-
ings.
October 20, 1849.

RAILROAD

India-rubber Springs.

If any Railroad Company or other party desires it,
the NEW ENGLAND CAR COMPANY will furnish
India-rubber Car Springs made in the form of washers,
with metallic plates interposed between the layers, or
in any other form in which they can be made; in all
cases guaranteeing the right to use the same against
any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.
1849.

**Brown's Old Established
SCALE WARE HOUSE,**

NO. 234 WATER ST. NEW YORK.

THE Subscriber, Practical Manufacturer of Scales
of every description, respectfully asks the atten-
tion of Railroad Companies to his Improved Wrought
Iron Railroad Track and Depot Scales which for
strength, durability, accuracy, convenience in weigh-
ing, and beauty of workmanship, are not surpassed by
any others in this country.

He is aware that this is rather a bold assertion for
him to make, yet he can say with confidence that they
have but to be tried to give them precedence over all
others.

Bank Scales made to order, and all Scales of
his make Warranted in every particular.
References given if required.

THE NEWCASTLE MANUFACTURING Co.
continue to furnish at the Works, situated in the
town of Newcastle, Del., Locomotive and other steam
engines, Jack Screws, Wrought Iron Work and Brass
and Iron Castings, of all kinds connected with Steam-
boats, Railroads, etc.; Mill Gearing of every descrip-
tion; Cast Wheels (chilled) of any pattern and size,
with Axles fitted, also with wrought tires, Springs,
Boxes and bolts for Cars; Driving and other wheels
for Locomotives.

The works being on an extensive scale, all orders
will be executed with promptness and despatch. Com-
munications addressed to Mr. William H. Dobbs, Su-
perintendent, will meet with immediate attention.

ANDREW C. GRAY,
President of the Newcastle Manuf. Co.

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS
OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished
at short notice; also, STEEL SPRINGS
of various kinds; and

SHAFTING FOR FACTORIES.

The above may be had at order at our Car Factory,

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.
1y48

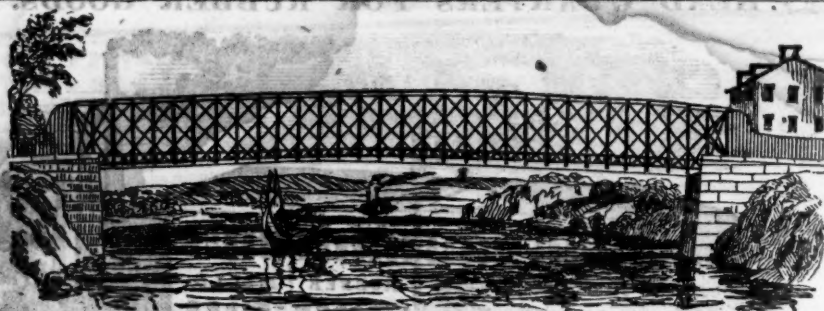
Iron Safes.

FIRE and Thief-proof Iron Safes, for Merchants,
Banks and Jewelers use. The subscriber manu-
factures and has constantly on
hand, a large assortment of Iron
Safes, of the most approved con-
struction, which he offers at much
lower rates than any other manu-
facturer. These Safes are made
of the strongest materials, in the
best manner, and warranted en-
tirely fire proof and free from dampness. Western
merchants and the public generally are invited to call
and examine them at the store of E. Corning & Co.,
sole agents, John Townsend, Esq., or at the manufac-
tory.



Each safe furnished with a thief-detector lock, of the
best construction.
Other makers' Safes repaired, and new Keys and
Locks furnished at the shortest notice.

H. W. COVER,
cor. Steuben and Water sts. Albany
August 24, 1848.



NEW YORK IRON BRIDGE COMPANY.

The Bridges manufactured by this Company having been fully tested on different Railroads, by constant use for more than two years, and found to answer the full expectations of their most sanguine friends, are offered to the public with the utmost confidence as to their great utility over any other Bridge now known. The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time it is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

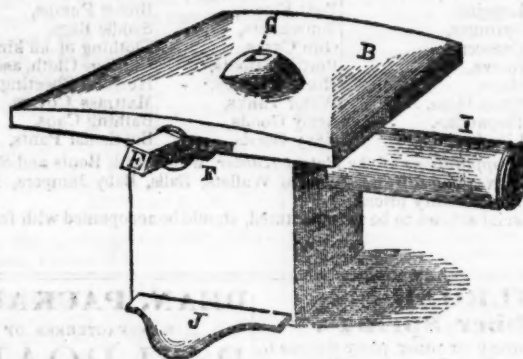
THE NEW YORK IRON BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, at short notice, and at moderate prices.

Models, and pamphlets giving full descriptions of the above Bridge, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 39 Jauncey Court, Wall st., or of W. RIDER & BROTHERS, 19 Nassau Street, where terms of contract will be made known, and where orders are solicited.

August 29, 1849.

M. M. WHITE,
Agent for the Company.

E. Harris' Patent Rotary Blacksmith Tuyere.



LETTERS Patent were issued January 9, 1849, to E. HARRIS, of Springfield, for an Improved Rotary Blacksmith Tuyere. Since that time there have been some hundreds put in operation, giving satisfaction and full proof of superiority over all others.

This Tuyere is so arranged that by one movement it can be changed from the largest work to the smallest; at the same time the fire is changed in proportion, thereby making a great saving in coal. Words cannot convey the full merits of this Tuyere; nor is it deemed necessary to speak in disparagement of other Tuyeres, as every smith is capable of judging for himself, and will give merit where merit is due.

I will simply say that there has not been a single instance where I have had my Tuyere put in use but it has given full satisfaction, and is recommended by all who have used them, as being superior to any other ever introduced. I would invite all to give them a trial; and the names of those using them being given, I hope it may induce others to try them, they recommend themselves.

Western Railroad Shop,	Springfield, Mass.
Connecticut val.	Pittsfield, "
"	Springfield, "
"	N. Hampton, "
Hartford	Hartford, Conn.
New Haven	New Haven, "
Norwich and Worcester,	Norwich, "
N. York and N. Haven,	New Haven, "
Saratoga and Whitehall,	Saratoga, N. Y.
Vermont Central,	"
Hudson and Berkshire,	Hudson, "
L. Kingsley,	Canton, Mass.

Hadley Falls Co. Ireland,	W. Springfield, Mass.
Sidney Patch,	Boston, "
Ames Manuf. Cor.,	Chickopee, "
American Machine wks,	Springfield, "
Dean, Pickard & Mills	"
G. Frank Bradley,	N. Haven, Conn.
Andrew Baird,	"
Collis & Lawrence	"
Slate & Brown,	Windsor Locks,
Gage,	Nashua, N. H.
Machine shop,	Manchester, "
Louis F. Lanney,	Baltimore, Md.
J. H. Baerddid,	179 Chambers st. N. Y.
J. Fanning	Rochester, "
G. W. Hunt	41 Gold st.
Chamberlain & Waldo,	"
P. S. Burges, carriage maker,	"
Samuel Miller,	"
J. Leggett,	Steverson falls, "
J. E. Harris,	Hillsdale, "
John L. Graham,	Albany, "
David Dalsell,	South Egremont, Mass.
Roys & Wilcock,	Berlin, Conn.

Agents for the sale of Tuyeres :

B. B. Stevens in New York and Connecticut.
A. J. VanAllen has the Agency for the Western and Southern States, and is now travelling through those States. Any communication addressed to the patentee will receive prompt attention.

E. HARRIS, Patentee,
Springfield, Mass.

November 23, 1849.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

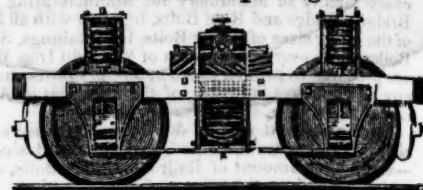
6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by-Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.
Boston, March 23, 1850. 6m13

F. M. Ray's Patent India-rubber Car Springs.



India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, as will invariably be done in every case of such violation.

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his return said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of Goodyear's Metallic Rubber, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

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ASSISTANT EDITORS,

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American Railroad Journal.

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Saturday, July 13, 1850.

Mouth of the Ontonagon, June 30, 1850.

My communications to the Journal relative to the Copper Mines of Lake Superior have been delayed since my arrival at this place on the 27th of May, by my attention having been directed to one point only. Without having visited any of the principal mines, except the Minnesota, and this but once for a cursory examination, I have not provided myself with such results of personal observation, as seemed to me of sufficient importance to present to the readers of the Journal.

A tedious detention at this place, waiting the arrival of a boat and mail, affords me an opportunity of writing, of which I will avail myself to jot down some general remarks upon the present condition and prospects of this region.

And first as to the increased facilities of communication with the country below, which I have before alluded to, as in preparation for the operations of this season. Early in the month of May the fine steamer London, elegantly fitted up with the best

accommodations of the lake steamers, commenced running on the route from Detroit to Sault Ste. Marie. Most unfortunately for her enterprising owners and for the comfort of early travellers, she was driven ashore by a field of floating ice in Lake George, twenty or thirty miles below the Sault, and several weeks were lost before she could again be got afloat. We passed her on our way up, and had an opportunity of going on board, and admiring her excellent outfit, and the spacious dimensions of her cabins and state rooms—a poor satisfaction to us, who had been crowded with a large number of surveyors and other passengers for four days in bad weather into the contracted cabin of the propeller Montezuma—a condition we should have pronounced decidedly insufferable, but for the patience, politeness and gentlemanly conduct of Capt. Gibson, the commander of the boat.

On the upper lake the favorite boat Napoleon, and the staunch copper-carrier Independence, both propellers, commenced their regular trips quite as early as was compatible with their safety; the latter indeed in her first trip up encountering so severe a storm, that several cattle were drowned on her decks, and a part of her deck load was necessarily thrown over. At the same time the large propeller Manhattan, well fitted up as a passenger boat, and belonging to an opposition company to that which controls the other boats, was on her way over the portage at the Sault. Raised out of the water upon "ways," well greased, she was drawn along by two capstans, turned by one horse each, at the rate of from two to three hundred feet each day. About two weeks since she regained her proper element, to float hereafter on as high a level above the sea as any vessels of her size probably ever reach. She has already made one trip up the lake, and is hourly expected again; but to the disappointment of all she failed in her attempt to come over the bar of this river, in which from her light draught it seemed likely she would succeed.—Until therefore assistance is obtained from the general government for the construction of piers at this point, there is no prospect of the Ontonagon becoming the important harbor for this region, which by Nature it was evidently designed to be, when man should add his exertions to complete the work.

With the boats already on this lake and those below, the copper country is at last well provided with the means of communication during the summer with the lower country, and of a ready transporta-

tion of its products. Were the arrangements for the transportation of the mails as well provided for as for that of freight, and rigidly adhered to, residents in this upper country would have much more cause for satisfaction. But it becomes more vexatious and disheartening on the arrival of a boat to be told that the mail was twice forgotten at Detroit and left there, and by another that the captain would not wait for it on leaving the Sault, or that the postmaster would not get it ready in time, and so it laid over a week there. These matters are of serious consequence to the companies, whose business supports these boats, and must tend in some degree to retard the progress of their operations and consequently the patronage of the boats. The latest advices we have from New York are to the 5th June. I doubt whether the far off Californians are not as well posted up in news as we of this comparatively central point—central as it seems to us, for are we not a part of the great State of Michigan, with the State of Wisconsin on our southern and western border separating us in the latter direction from the territory of Minnesota? The lines of the copper region are State-lines, and the nearest territory to it is soon to be received into the Union as a great and important State. And yet with all the modern improvements of steam on land and water, and of telegraphs, we are a month behind the rest of the world. We know not what has passed in this time among our nearest neighbors, and have barely heard of the invasion of Cuba and the deserved repulse and castigation those of our restless countrymen met who joined in the attack upon Cardenas. The very soil we are now upon may have been proclaimed for sale by Congress, and the new bill proposed by the Committee on Public Lands in the Senate become a law, and we sit here in quiet ignorance of that, which when announced will create no little stir among all the inhabitants hereabouts, and lead to the adjustment and settlement of many important claims, some valid and some worthless.

And now having given a little consideration to the means provided for reaching this country, let us regard its appearance for a moment as it presents itself on the arrival of a traveller in the latter part of the month of May—this month when Nature below has put aside its wintry dress, and is smiling in the bright promise of blooming orchards and gaily decorated gardens. Here it is the beginning of the opening of navigation. The ice still

floats in cakes down the streams, and in places protected from the rays of the sun it lies in huge masses slowly wasting from day to day. The snow hangs in banks along the shores of the lake, and is found even into the month of June in spots through the woods. The wild flowering plants, which all winter have been kept well protected from the frosts beneath this non-conducting covering, spring rapidly up as soon as they feel the first rays of the sun; and the woods are all at once blooming with the modest little epigeia-repens or mayflower or trailing arbutus, which in the sandy woods of New Jersey and southeastern part of Massachusetts had been the harbinger of spring a month earlier.—With this beautiful little flower come varieties of trillia and violets and anemones much like the productions of our eastern woods. But the note of birds is silent here, for few are found in this wild region, and (excepting insects) animal life generally in these woods is represented by few species, especially of those regarded as game. As the spring advances the days rapidly lengthen, and the whole vegetable kingdom quickened by the action of the sun's rays for seventeen hours out of the twenty four soon attains the same degree of forwardness with the growth of other places, whose start was several weeks earlier. The foliage is put forth almost at once, and one is every day surprised at the rapidity with which the openness of the woods is closed up, and the view obscured. In the month of June the land in the few clearings is prepared for planting, the potatoes, oats, grass seed and garden vegetables are put in the ground, but the planting of turnips and ruta-bagas, which are here one of the principal crops, is deferred until July, these roots being mostly allowed to remain all winter in the ground, protected by the snow, before they are gathered. The potatoes also keep very well in the same way, and are frequently dug from under the snow as they are wanted. These crops grow with great luxuriance on the new soil of this region, particularly along the trap ridge, where the mines are situated; and so valuable are they, and the market so certain and so near, that those who engage in farming make a better business of it than is often the experience of agriculturists in much more favored climes. There are, however, few farmers here, not a quarter enough to supply the wants of the country. The mining companies themselves are obliged to till the soil as well as gather their crops beneath it; and they would be glad to give up this branch, and sufficient land too, to those who would make it their whole business. But it is the insects before alluded to, that most interfere with agricultural operations, and discourage men from undertaking to clear and cultivate the lands. These are the various kinds of flies common in the spring and early part of the summer all along our northern wild lands. The first that come are the common black flies—half as large as a house fly. They seem to rise out with the first flowers from under the snow, and in still weather, or at all times under the shelter of the woods, surround their poor victims like swarms of bees, attacking incessantly the hands and face, biting particularly the wrists under cover of the wristband, and the ears, and behind them under the edge of the hair, and round the neck, till the parts become severely sore and swollen, sometimes so much so that the cavities of the eye are covered over by the swollen flesh. Soon their forces are joined by the mosquitos, which keep up their attacks all night long as well as all day, and in certain favorite spots far exceed in number the dense swarms of the black

fly. The mosquitos have not been long at work, before one is surprised occasionally by a new sort of bite, a sharp prickling sensation, burning like fire, but without any visible agent to produce it. A repetition of the pain, however, makes the eye more watchful, and the two almost invisible wings of a very minute fly are discovered standing on end, as the head of the little rascal is turned down into the pores of the skin. These torments are called midges, or by the Indians in Maine, very appropriately, "no-see-ums." They work, too, night and day, and encounter no serious obstacle in the meshes of a mosquito net. Next appears a fly similar to the common horse fly, which, as horses are not very plenty, seems driven to attack the human race—below generally treated by them with more respect—their bite is sharp, but not so often repeated as of the others. With them comes a yellow buzzing fly, which I have mistaken for the stinging "yellow jacket," whose appearance is later in the season. This fly hangs buzzing in the air in one spot directly before the face, and if frightened suddenly takes another position before it lights to take its meal. The bite of this fly is like that of a leech, but as the attack is not made by battalions it can be generally guarded against. The last of these pests is the great clumsy "moose fly," as he is called in Maine, much larger than the "deer fly," which I have not seen here. From his size he seldom gets a chance to bring his apparatus to bear upon the human person, and the pump never performs more than the first stroke before the whole machinery is knocked into utter destruction. But in connection with the two preceding species this fly is very severe in its attacks upon cattle and horses. Now is the season in which these nuisances have almost full sway through the woods. It is no time for exploration, nor for travelling with any comfort; and I have been thus stationary, with the more satisfaction, knowing that during August and afterwards one can go from place to place with little annoyance of this kind. But after all the winter, so all say who have spent one here, cold as it is, is the season of the year for most enjoyment, and for travelling through the woods with the greatest ease. The foliage is then fallen from all the deciduous trees, and the underbrush is bent down and covered by the snow. Upon this one travels comfortably with snow shoes, and supplies are carried where wheels could not go in the summer. Much transportation is conducted by means of dogs, or what are called dog trains. At the Forest mine, up this river, is a fine pair of dogs, which the last winter were occupied a good part of the season carrying supplies to the mine. They would draw with ease a barrel of pork at a load, weighing 200 lbs, beside the brine and barrel, and would keep at work all day with untiring spirit.—One is a Newfoundland the other a Mastiff, eleven years old. In the summer they are inactive and worthless; but in the winter full of life and apparently much enjoying their usefulness. On the train, which is a mere board, turned up at the end, a man can ride very safely through the woods, when there has been no trail cut. It is only necessary that the track should be broken and pressed down by one or two men on snow shoes, going ahead the first time after a deep fall of snow.

Of the mines, as I before remarked, I have not seen much this season. Every day, however, I hear accounts from some of them. Already visitors from below, mostly from Pittsburg, Penn., are passing about from one to another, and I hear but one general feeling of satisfaction expressed, and

among the strangers of wonder at the extraordinary developments of massive copper at some of the mines. These exceed anything ever before dreamed of, and no person who comes up to the country for the first time seems to have any conception of the huge blocks of solid copper he finds standing in the lodes or drawn up to the surface to be cut into portable shapes before being sent below. Many mining tracts have been purchased of the government since last fall, and several new companies have commenced operations in well selected localities. One only, the Copper Falls, which has been struggling on for several years, has stopped work; being the last of those companies which have attempted to prosecute mining operations entirely on the north side of the trap range. The prospects of no company appeared better than of this in the year 1845; but the failure of all similarly situated to it, has since inspired a general distrust of the productiveness of the veins in the alternating belts of trap and sandstone north of the main ridge. Of all the veins on the south side the trap range, which have been opened in the amygdaloidal trap there is no instance yet of any failure; and new operations are now commenced there with much spirit and confidence.

In the Ontonagon region the prospects are even still more encouraging. On the whole range not a single company that have been operating have met with any cause to excite distrust in the wonderful productiveness of the veins of copper; tho' the remoteness of many of them from the river and lake will for a time prove a serious cause of additional expense in the transportation of supplies and of copper. Here, too, many new tracts have been purchased, and some new companies have gone into operation. On the east, the *Algonquin* and *Douglass Houghton* are vigorously at work mining and establishing mining settlements. It is this necessary founding of a colony at each mine—including the making of roads—building of houses, the logs, shingles and boards for which have all to be prepared by the company, the preparation of machinery for the mine, the procuring of hay, oats and potatoes, that absorb the capital, and produce no direct returns of copper. Much of the products of the mine being stamp work, this must be kept on hand until a mill is erected for its preparation for shipment—thus several years may pass before the mine, however rich it may be, is fairly in condition for prosperous working. The two mines just named are in the embryo state, like most of the others: they have the last winter and spring sufficiently proved their productiveness to warrant the establishment of permanent works for putting their vein-stuff into marketable shape.

So it is with the *Adventure* and the *Ridge* mine next west of it, both which are several miles nearer the Ontonagon river. The workings beneath the ancient pits at the mines have brought to light masses of copper, rich stamp work, and at the *Ridge* mine considerable silver in lumps of several ounces. The *Aztec* mine, adjoining the *Adventure* on the east, of more external show of ancient works than any of them, remains untouched, and so of several other adjoining tracks which have been entered. Until a plank road is constructed to the mouth of the river, the expenses of transportation will prove a serious obstacle to the working of these mines.

The *Minnesota* has been more extensively worked than any of the others. From its great vein twenty-six tons of mass copper were shipped from the mouth of the river this month, and about fifty-five

tons more here are ready to come down. Besides this, a large quantity of stamp work is ready for the stamp, which will be completed, it is expected, in a about six weeks. It is a reasonable estimate that these will add 100 tons to the shipment of this year. The mine presents a wonderful display of great masses of copper, some thrown down, and some still standing in the vein. The deepest drift is only 85 feet below the surface, which is the level of the adit. This drift is 350 feet in length; the next drift is 30 feet higher, and is 150 feet long. There are three shafts, all going down to the adit level. The greatest thickness of any mass is 40 inches, though their prongs often run into the walls a distance across the vein of six feet. The weight of one single mass, broken off from its continuation in the end of the drift is estimated at 40 tons. The four parallel veins of this tract are distinctly recognized upon the other mining tracts ten or twelve miles east of the Minesota, and also on the other side of the river. Should they be found as far as they are known, and even where they have been extensively worked by the ancients, half as productive as they have proved at those points only where they have been opened, they must very soon become objects of most extensive exploration, and throw more copper into our markets, than any man who has a regard for his reputation would think it prudent to suggest as possible. As wild a scheme of speculation as was ever entered into—blindly commenced and conducted without experience, and without knowledge of the country, ended naturally enough in a general failure; but it was no failure of the copper mines, for these were never found, or if found, were not recognized. This result, foretold, as well as the speculations themselves by Dr. Houghton, has left a stigma upon the mines they do not deserve; but which they are themselves now rapidly removing. Were the spots already entered the objects of the lavish expenditure before thrown away in barren places, or were they furnished with a greater part of the the capital that English miners judge essential for the plant of a mine, the result I fully believe would be such as not only to astonish the world, but seriously to affect the value of the copper business, where it is now most prosperous.

On the west side of the river the tract of the *Forest mine* covers several sections along the trap ridge. On these are found at least four parallel veins like those of the Minesota in precisely the same geological position. On these too are ancient pits, in the rubbish of which are found hammers and other relics. In one of the veins only three or four feet below where the ancients worked, and only twenty feet below the surface, a mass of copper has been struck, which so far as has been exposed measures three and a half feet across its width and passes obliquely downwards into the floor, standing now over three feet in height above it. How large it will prove no one can form any estimate. A shaft has been sunk here 100 feet in depth and an adit and levels run, all since last October, and much good stamp and barrel work extracted. It is questionable, however, whether the work done was on the same vein as the mass above. This company is nearer to navigable water than any other on the lake their workings being less than two miles by actual measurement from the river, to which it is a down grade or level all the way; and some of the ancient works on the trap ridge extend to within a mile of the river.

Further west the "*Ohio Trap Rock Company*" have commenced mining full ten miles back, but

fourteen miles from their landing towards the mouth of the Ontonagon. They raised last year some fine masses of copper and good stamp work; but the expenses of transportation probably cause them to rely for the present, until some facilities shall have been provided for their reduction. This locality too is characterized by the four parallel veins and the ancient works upon them.

On the Minesota tract a new company called the *Peninsula* is to have this season a plot set off to them for the commencement of new operations.

South of the Minesota the *Ontonagon Company* have been prosecuting work, but more upon the surface, as in clearing land and building houses, than in the mine. In this, however, they find a promising vein, and have extracted some copper, mostly in stamp work.

DEPTHS OF SQUARE BARS OF CAST IRON, calculated to support from 1 cwt. to 14 tons in the centre, the deflexion not exceeding one fortieth of an inch each foot in length.

Length in feet.		10		12		14		16		18		20	
Wght	Wght.	Depth		Depth		Depth		Depth		Depth		Depth	
in cwt.	in lbs.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1 cwt.	112	1.9	2.0	2.2	2.4	2.5	2.6	2.8	3.0	3.1	3.3	3.4	3.6
2	224	2.2	2.4	2.6	2.8	3.0	3.1	3.3	3.5	3.7	3.9	4.0	4.2
3	336	2.4	2.7	2.9	3.1	3.3	3.4	3.6	3.8	4.0	4.2	4.4	4.6
4	448	2.6	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9
5	560	2.8	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1
10	1,120	3.3	3.6	3.9	4.2	4.4	4.7	4.9	5.1	5.3	5.5	5.8	6.1
15	1,680	3.6	4.0	4.3	4.6	4.9	5.1	5.3	5.5	5.7	5.9	6.2	6.5
1 ton.	2,240	3.9	4.3	4.6	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3
1½	2,800	4.1	4.5	4.9	5.2	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6
1¾	3,360	4.3	4.7	5.1	5.5	5.8	6.1	6.4	6.7	7.0	7.3	7.6	7.9
2	3,920	4.5	4.9	5.3	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1
2½	4,480	4.7	5.1	5.5	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3
3	5,040	4.9	5.3	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5
3½	5,600	5.1	5.5	5.8	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.6
4	6,160	5.3	5.7	6.0	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7
5	7,280	5.5	5.9	6.2	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.6	8.9
6	8,400	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1
7	9,520	5.9	6.3	6.6	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3
8	10,640	6.1	6.5	6.8	7.1	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.5
9	11,760	6.3	6.7	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1	9.4	9.7
10	12,880	6.5	6.9	7.2	7.5	7.8	8.1	8.4	8.7	9.0	9.3	9.6	9.9
15	19,320	7.7	8.1	8.4	8.7	9.0	9.3	9.6	9.9	10.2	10.5	10.8	11.1
20	25,760	9.0	9.4	9.7	10.0	10.3	10.6	10.9	11.2	11.5	11.8	12.1	12.4
30	38,640	10.8	11.2	11.5	11.8	12.1	12.4	12.7	13.0	13.3	13.6	13.9	14.2
40	51,520	12.4	12.8	13.1	13.4	13.7	14.0	14.3	14.6	14.9	15.2	15.5	15.8
50	64,400	14.1	14.5	14.8	15.1	15.4	15.7	16.0	16.3	16.6	16.9	17.2	17.5
60	77,280	15.8	16.2	16.5	16.8	17.1	17.4	17.7	18.0	18.3	18.6	18.9	19.2
Deflexion in in.		.25	.3	.35	.4	.45	.5						

Length in feet.		22		24		26		28		30	
Wght	Wght.	Depth		Depth		Depth		Depth		Depth	
in cwt.	in lbs.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
1 cwt.	112	2.7	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7
2	224	3.3	3.4	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3
3	336	3.6	3.8	3.9	4.1	4.2	4.3	4.4	4.5	4.6	4.7
4	448	3.9	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
5	560	4.1	4.2	4.4	4.5	4.6	4.7	4.8	4.9	5.0	5.1
10	1,120	4.9	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0
15	1,680	5.4	5.6	5.8	6.0	6.1	6.2	6.3	6.4	6.5	6.6
1 ton.	2,240	5.8	6.0	6.3	6.5	6.6	6.7	6.8	6.9	7.0	7.1
1½	2,800	6.1	6.4	6.6	6.9	7.0	7.1	7.2	7.3	7.4	7.5
1¾	3,360	6.4	6.7	7.0	7.2	7.3	7.4	7.5	7.6	7.7	7.8
2	3,920	6.7	6.9	7.2	7.4	7.5	7.6	7.7	7.8	7.9	8.0
2½	4,480	6.8	7.2	7.6	7.9	8.0	8.1	8.2	8.3	8.4	8.5
3	5,040	7.3	7.6	7.9	8.2	8.3	8.4	8.5	8.6	8.7	8.8
3½	5,600	7.6	7.9	8.2	8.5	8.6	8.7	8.8	8.9	9.0	9.1
4	6,160	7.9	8.2	8.5	8.8	8.9	9.0	9.1	9.2	9.3	9.4
5	7,280	8.2	8.5	8.8	9.1	9.2	9.3	9.4	9.5	9.6	9.7
6	8,400	8.6	9.0	9.4	9.7	9.8	9.9	10.0	10.1	10.2	10.3
7	9,520	9.0	9.4	9.8	10.2	10.3	10.4	10.5	10.6	10.7	10.8
8	10,640	9.4	9.8	10.2	10.6	10.7	10.8	10.9	11.0	11.1	11.2
9	11,760	9.7	10.1	10.5	10.9	11.0	11.1	11.2	11.3	11.4	11.5
10	12,880	10.0	10.4	10.8	11.2	11.3	11.4	11.5	11.6	11.7	11.8
15	19,320	10.3	10.7	11.1	11.5	11.6	11.7	11.8	11.9	12.0	12.1
20	25,760	11.4	11.8	12.2	12.6	12.7	12.8	12.9	13.0	13.1	13.2
30	38,640	12.5	12.9	13.3	13.7	13.8	13.9	14.0	14.1	14.2	14.3
40	51,520	13.5	13.9	14.3	14.7	14.8	14.9	15.0	15.1	15.2	15.3
50	64,400	14.5	14.9	15.3	15.7	15.8	15.9	16.0	16.1	16.2	16.3
60	77,280	15.5	15.9	16.3	16.7	16.8	16.9	17.0	17.1	17.2	17.3
Deflexion in in.		.55	.6	.65	.7	.75					

Examples.—1. To find the depth of a rectangular bar of cast iron to support a weight of 10 tons in the middle of its length, the deflexion not to exceed one-fortieth of an inch per foot in length, and its length 20 feet, also let the depth be 6 times the breadth.

Opposite 6 times the weight and under 20 feet in length is 15.3 inches the depth, and one-sixth of 15.3=2.6 inches the breadth.

2. To find the diameter for a cast iron shaft or solid cylinder that will bear a given pressure, the flexure in the middle not to exceed one-fortieth of an inch for each foot of its length, the distance of the bearings being 20 feet, and the pressure on the middle equals 10 tons.

Constant multiplier 1.7 for round shafts, then $10 \times 1.7 = 17$. And opposite 17 tons and under 20 feet is 11.2 inches for the diameter.

But half that flexure is quite enough for revolving shafts; hence $17 \times 2 = 34$ tons, and opposite 34 tons is 13.3 inches for the diameter.

The above calculations of the strength of cast iron bars are founded on experiments of Mr. Hodgkinson of Manchester, and are extracted from his new edition of *Tredgold's Abstract of Table, Weale's Engineer's Pocket-book.*

THE WEIGHT OR PRESSURE WHICH IS CALCULATED A COLUMN OF CAST IRON WILL SUSTAIN WITH SAFETY.

Length or height in feet.	4	6	8	10	12	14
Diameter.	Weight in cwt.	Weight in cwt.	Weight in cwt.	Weight in cwt.	Weight in cwt.	Weight in cwt.
Inch.						
2½	119	105	91	77	65	55
3	178	163	145	128	111	97
3½	247	232	214	191	172	156
4	326	310	288	266	242	220
4½	418	400	379	354	327	301
5	522	501	479	452	427	394
6	607	592	573	550	525	497
7	1032	1013	989	959	924	887
8	1333	1315	1289	1259	1224	1185
9	1716	1697	1672	1640	1603	1561
10	2119	2100	2077	2045	2007	1964
11	2576	2550	2520	2490	2450	2410
12	3050	3020	2970	2930	2890	2850

Length or height in feet.	16	18	20	22	24
Diameter.	Weight in cwt.	Weight in cwt.	Weight in cwt.	Weight in cwt.	Weight in cwt.
Inch.					
2½	47	40	34	29	25
3	84	73	64	56	49
3½	135	119	106	94	83
4	198	178	160	144	130
4½	275	251	229	208	189
5	365	337	310	285	262
6	469	440	413	386	360
7	848	808	765	725	686
8	1142	1097	1052	1005	959
9	1515	1467	1416	1364	1311
10	1916	1865	1811	1755	1697
11	2358	2305	2248	2189	2127
12	2830	2780	2730	2670	2600

The relative strength of cast iron being assumed as 1—, steel will give 2.518, and wrought iron 1.745.

WEIGHT OF LEAD PIPES.

Bore in inches.	Length in feet.	Weight of each length in lbs.		
		Common	Middling	Strong.
1	15	16		
1	15	24	27	30
1	15	30	40	43
1½	12	36	44	53
1½	12	48	56	67
2	10	56	70	83
2½	10	70	86	100

RELATIVE WEIGHT AND STRENGTH OF ROPES AND CHAINS.

Cir. of Rope in in.	Weight per fath. in lbs.	Diameter of Chain, in in.	Weight per fath. in lbs.	Proof strength in tons & cwt.
3	2	5-16	5	1 5
4	4	7-16	8	1 16
5	7	9-16	10	2 10
6	11	11-16	14	3 5
7	15	13-16	18	4 3
8	19	15-16	22	5 2
9	23	17-16	27	6 4
10	28	19-16	32	7 7
11	30	21-16	37	8 13
12	36	23-16	43	10 0
13	39	25-16	49	11 11
14	45	27-16	56	13 8
15	56	29-16	63	14 18
16	60	31-16	71	16 14
		33-16	79	18 11
		35-16	87	20 8
		37-16	96	22 13
		39-16	106	24 18

WEIGHT OF A LINEAL FOOT OF CAST IRON PIPES IN POUNDS.

Diameter of bore in inches.	Thickness of the metal in inches.	Weight in lbs.
2	8-8	12-3
2 1/2	10-6	14-7
3	12-4	17-2
3 1/2	14-2	19-6
4	16-1	22-1
4 1/2	18-0	24-5
5	19-8	27-0
5 1/2	21-6	29-5
6	23-5	31-9
6 1/2	25-3	34-4
7	27-2	36-8
7 1/2	29-0	39-1
8	30-8	41-7
8 1/2	32-9	44-4
9	34-5	46-6
9 1/2	36-3	49-1
10	38-2	51-5
10 1/2	40-0	54-0
11	41-8	56-4
11 1/2	43-6	58-9
12	45-4	61-3
13	47-2	63-7
14	49-0	66-1
15	50-8	68-5
16	52-6	70-9
17	54-4	73-3
18	56-2	75-7
19	58-0	78-1
20	59-8	80-5

Diameter of bore in inches.	Thickness of the metal, in inches.	Weight in lbs.
2	1	33-3
2 1/2	1 1/4	37-6
3	1 1/2	41-9
3 1/2	1 3/4	46-2
4	2	50-5
4 1/2	2 1/4	54-8
5	2 1/2	59-1
5 1/2	2 3/4	63-4
6	3	67-7
6 1/2	3 1/4	72-0
7	3 1/2	76-2
7 1/2	3 3/4	80-8
8	4	84-8
8 1/2	4 1/4	89-1
9	4 1/2	93-4
9 1/2	4 3/4	97-7
10	5	102-0
10 1/2	5 1/4	106-3
11	5 1/2	110-6
11 1/2	5 3/4	114-9
12	6	119-2
13	6 1/4	123-5
14	6 1/2	127-8
15	6 3/4	132-1
16	7	136-4
17	7 1/4	140-7
18	7 1/2	145-0
19	7 3/4	149-3
20	8	153-6

The two flanges of a pipe are considered as equal to the weight of one foot in length.

RELATIVE STRENGTH OF BODIES TO RESIST TORSION.	RELATIVE STRENGTH OF BODIES TO RESIST TORSION.
Lead.....1-0	Swedish iron.....9-5
Tin.....1-4	English ditto.....10-1
Copper.....4-3	Blistered steel.....16-6
Yellow brass.....4-6	Shear ditto.....17-0
Gun metal.....5-0	Cast ditto.....19-5
Cast iron.....9-0	

COMPARATIVE STRENGTH, SIZE AND WEIGHT OF IRON WIRE ROPE, HEMPEN ROPE, AND IRON CHAIN.

Breaking Weight in tons.	Description.	Size in inches.	Weight per fathom.
4	Wire rope.....1	circum.	0 12
	Hemp rope.....2	do.	1 1
	Chain.....1/2	diam.	3 0
8	Wire rope.....2	circum.	2 10
	Hemp rope.....5	do.	6 0
	Chain.....1	diam.	16 0
12	Wire rope.....2 1/2	circum.	4 8
	Hemp rope.....7	do.	12 3
	Chain.....1 1/2	diam.	27 0
16	Wire rope.....3	circum.	6 12
	Hemp rope.....8	do.	14 3
	Chain.....1 3/4	diam.	36 0
20	Wire rope.....3 1/2	circum.	9 4
	Hemp rope.....9	do.	19 6
	Chain.....2	diam.	46 0
24	Wire rope.....4	circum.	12 4
	Hemp rope.....10	do.	25 0
	Chain.....2 1/4	diam.	53 0
30	Wire rope.....4 1/2	circum.	16 5
	Hemp rope.....11	do.	30 0
	Chain.....2 3/4	diam.	62 0
36	Wire rope.....5	circum.	22 5
	Hemp rope.....12 1/2	do.	35 10
	Chain.....3	diam.	78 0
44	Wire rope.....5 1/2	circum.	27 0
	Hemp rope.....14	do.	41 10
	Chain.....3 1/4	diam.	96 0
54	Wire rope.....6	circum.	34 0
	Hemp rope.....15	do.	47 8
	Chain.....3 3/4	diam.	115 0

WEIGHT OF MODULUS OF ELASTICITY OF VARIOUS METALS.

Metal.	Elasticity in lbs.
Steel.....	29,000,000
Wrought iron.....	24,920,000
Cast iron.....	18,400,000
Zinc.....	13,680,000
Gun metal.....	9,873,000
Brass.....	8,930,000
Tin.....	4,608,000
Lead.....	720,000

Note.—The modulus of elasticity for oak is 1,714,500, and for cast iron 18,400,000, or 10-7 times that of oak; hence, cast iron is 10-7 times as stiff as a piece of oak of equal dimensions and bearing.

WEIGHT OF COPPER PIPES, 12 INCHES IN LENGTH AND 1/2 OF AN INCH IN THE KNEES.

Diameter of bore in inches.	Weight in lbs.
1	0-94
1 1/4	1-33
1 1/2	1-69
2	2-08
2 1/2	2-42
3	2-87
3 1/2	3-21
4	3-97
4 1/2	4-78

WEIGHT OF A SUPERFICIAL FOOT OF VARIOUS METALS IN LBS.

Thickness by the Birmingham Wire Gauge.	Names.	1	2	3	4	5	6	7	8
Iron.....	12-50	12-00	11-00	10-00	8-74	8-12	7-50	6-86	6-22
Cop.....	14-50	13-90	12-75	11-60	10-10	9-40	8-70	7-90	7-10
Brass.....	13-75	13-20	12-10	11-00	9-61	8-93	8-25	7-54	6-84
Iron.....	6-24	5-62	5-00	4-38	3-75	3-12	2-82	2-42	2-02
Cop.....	7-20	6-50	5-80	5-08	4-34	3-60	3-27	2-87	2-47
Brass.....	6-86	6-18	5-50	4-81	4-12	3-43	3-10	2-70	2-30

Thickness by the Wire Gauge.

Names.	16	17	18	19	20	21	22	23
Iron.....	2-50	2-18	1-86	1-70	1-54	1-40	1-25	1-12
Cop.....	2-90	2-52	2-15	1-97	1-78	1-62	1-45	1-30
Brass.....	2-75	2-40	2-04	1-87	1-69	1-54	1-37	1-23
Iron.....	1-00	0-90	0-80	0-72	0-64	0-56	0-50	0-44
Cop.....	1-16	1-04	0-92	0-83	0-74	0-64	0-58	0-52
Brass.....	1-10	0-99	0-88	0-79	0-70	0-61	0-55	0-49

Thickness in parts of an inch.

1-16	1-8	3-16	1-2	5-16	1-1
Iron.....	2-5	5-8	7-5	10-1	12-5
Cop.....	2-9	5-8	8-7	11-6	14-5
Brass.....	2-7	5-5	8-2	10-9	13-6
Lead.....	3-7	7-4	11-1	14-8	18-5
Iron.....	17-5	20-1	25-1	30-1	35-1
Cop.....	20-3	23-2	28-9	34-7	40-4
Brass.....	19-0	21-8	27-1	32-5	37-9
Lead.....	25-9	29-6	37-0	44-4	57-8

Liverpool Docks.

The docks of Liverpool have been gradually increased and enlarged at a great expense, to meet the wants of the vast and increasing commerce of the port. An immense range of docks and ware houses extends nearly two miles along the banks of the river. The docks are of three kinds, wet docks, dry docks, and graving docks. The wet docks are chiefly used for vessels of large burden, in which they can float at all tides, the water being retained by means of gates. The dry docks are left dry at low tides, and are generally occupied by coasting vessels of smaller tonnage. The graving docks can have the water admitted or excluded at pleasure, and are appropriated to the repairing of ships. The Old Dock was situated about the centre of this line of docks. A little to the north of this, and nearer to the river, is the Canning Dock, a dry dock constructed in the reign of George II., which is now converted into a wet dock; it contains an area of 19,095 square yards, and has a quay 500 yards long; it has communication with three graving docks. To the south of this is the Salthouse Dock, so called from some salt works formerly contiguous to it, but now removed up the river to Garston. It was constructed about the same time as the dry dock; its area is 23,025 square yards, and its quay is 759 yards in extent; it has convenient warehouses, with arcades for foot passengers on the east side, and extensive sheds on the west side. The upper part of this dock is principally appropriated to ships which are laid up, and the lower part for vessels in the Mediterranean, Irish, and coasting trades. The whole of the buildings between its north end and the south end of Canning Dock have been taken down, and the space thus gained has been appropriated to the improvement of the dock and quay at the north end. The King's Dock, on the south of Salthouse Dock, was constructed in the reign of George III.; it encloses an area of 37,776 square yards; its quay is 875 yards in length. Tobacco is exclusively landed here, and on the west side of the quay are extensive warehouses appropriated to this article; they are 575 feet in length, and 239 in depth. There were warehouses on the opposite side, which are now converted into sheds for the security of merchandise. Across the entrance of the quay is a handsome swivel bridge of cast iron. A dry dock or basin, and two graving docks, communicate with this dock on the south; in the same direction a little further from the river, and also communicating with the basin, is the Queen's Dock, constructed about the same time as the King's Dock; its area is 41,501 square yards, and the quay is 1,255 yards long. This dock communicates on the south with another, called the Half Tide Dock, and is connected on the west with the Brunswick Dry Basin. On the south of this is the New Brunswick Dock, opened in 1832, of much larger dimensions than any of the preceding, its area being 70,069 square yards, and its quay 1,092 yards long. It has a graving dock at the south end. This dock

at present forms the southern extremity of the docks. On the north of Canning Dock is George's Dock, originally constructed in the beginning of the reign of George III., and since enlarged. It now contains 26,793½ square yards; the quay is 1,001 yards in length, on the east side of which is a range of extensive warehouses, and an arcade for foot passengers; on the west side are sheds for the protection of merchandise from the weather. At each end of the dock are handsome cast iron bridges. On the north of this is Prince's Dock, which was constructed in the latter part of the reign of George III., and was opened with much ceremony on the day of the coronation of George IV. It has an area of 57,129 square yards, and a quay 1,613 yards long. Prince's Dock, George's Dock, Canning Dock, and Salthouse Dock, communicate with each other by basins. Along the west side of the dock is a parade near the river, 750 yards long and 11 wide, defended by a parapet wall; from this parade there are flights of steps leading to the river. To the north of the basin attached to the Prince's Dock are four spacious wet decks, with the following dimensions:—

	Area in sq. yds.	Length of quays in yards.
Waterloo Dock.....	30,764½	1012
Clarence Dock.....	29,085½	839
Trafalgar Dock.....	33,642½	1050
Victoria Dock.....	29,313	914

Here is also a large graving dock, fitted up with patent slips. A small dock with convenient warehouses, situated between Salthouse and the King's Dock, belongs to the trustees of the late Duke of Bridgewater. The Mersey and Irwell Navigation Company have a small dock situated between the Canning and George's Dock, called the Manchester Dock. The several carriers by water have also basins with quays for the accommodation of their respective barges. A dredging machine in constant use worked by a steam engine of ten horse power, for clearing the docks from the deposits brought up by the tides; fifty tons of silt are thus raised per hour into barges, by which it is conveyed to an open part of the river, where it is washed away by the current. The total dock room of this port is 111 acres, and the quay space is nearly eight miles in length.

Railway Law in Canada.

An Act to provide for affording the Guarantee of the Province to the Bonds of Railway Companies on certain conditions, and for rendering assistance in the construction of the Halifax and Quebec Railway, passed May 30th, 1849.

Whereas at the present day, the means of rapid and easy communication by railway, between the chief centres of population and trade in any country and the more remote parts thereof, are become not merely advantageous, but essential to its advancement and prosperity; and whereas experience has shown, that whatever be the case in long settled, populous and wealthy countries, in those which are new and thinly peopled and in which capital is scarce, the assistance of government is necessary and may be safely afforded to the construction of lines of railway of considerable extent; and that such assistance is best given by extending to companies engaged in constructing railways of a certain length, under charter from, and consequently with the approval of the legislature, the benefit of the guarantee of the government, under proper conditions and restrictions, for loans raised by such companies to enable them to complete their work: be it therefore enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the legislative council and of the legislative assembly of the Province of Canada, constituted and assembled by virtue of and under the authority of an act passed in the parliament of the United King-

dom of Great Britain and Ireland, and entitled, An Act to re-unite the Provinces of Upper and Lower Canada, and for the Government of Canada; and it is hereby enacted by the authority of the same, That it shall be lawful for the governor in council, on behalf of this Province, to guarantee the interest on loans to be raised by any company chartered by the legislature of this Province for the construction of a line of railway not less than seventy five miles in extent, within this Province, on condition—that the rate of interest guaranteed shall not exceed six per cent. per annum—that the sum on which interest shall be so guaranteed shall not be greater than that expended by the company before the guarantee is given, and shall be sufficient to complete their road in a fitting manner, and to the satisfaction of the commissioners of public works, provided always, that no such guarantee be given to any company until one half of the entire line of road shall have been completed—that the payment of the interest guaranteed by the Province shall be the first charge upon the tolls and profits of the company, and that no dividend shall be declared so long as any part of the said interest remains unpaid—that so long as any part of the principal on which interest is guaranteed by the Province remains unpaid, no dividend shall be paid to the stockholders, until a sum equal to three per cent. on the amount so remaining unpaid, shall have been set aside from the surplus profits of such railroad, and paid over to the receiver general under the provisions hereinafter contained as a sinking fund for the redemption of the debt on which interest is guaranteed as aforesaid—and that the Province shall have the first hypothec, mortgage and lien upon the road, tolls and property of the company for any sum paid or guaranteed by the Province, excepting always, the hypothec, mortgage or lien of holders of bonds or other securities on which interest is guaranteed by the Province, for the interest so guaranteed and the principal on which it shall accrue.

II. And be it enacted, That each railway company, deriving any aid or advantage under this act, shall make up and render to the inspector general of public accounts of this Province, each half year, a true account in writing of the affairs of such company, in such form and with such particulars as the said inspector general shall from time to time require, which said accounts shall be signed by the president and the directors of the said company, or a quorum of that body, and shall be sworn to by the parties signing the same before one of the Judges of the Superior courts of common law jurisdiction in Upper Canada, or one of the Judges of the court of superior civil jurisdiction in Lower Canada, and the said company or the proper officer thereof shall, within ten days after the rendering of such account, pay over such amount as may be payable under the provisions of this act to the receiver general or this Province.

III. And be it enacted, That the sum or sums of money hereinbefore provided to be taken from the surplus profits of any railroad as a sinking fund, shall be invested by the inspector general of this Province in such securities of this Province as may be approved by the governor in council; provided always, that it shall be lawful for the directors of any such company to make such by-laws as may be requisite to prevent the provision of this act in respect of such sinking fund from bearing unequally upon any class of stockholders.

IV. And be it enacted, That, provided the conditions mentioned in the foregoing section be observed, it is expedient that such guarantee be afforded under such further terms and conditions as may be deemed necessary by the governor in council and agreed to by the company applying for such guarantee, it being clearly understood, that no enactments which the legislature may hereafter make to ensure the observance of such terms and conditions, or to give effect to the privileged claim and lien of the Province upon the road, tolls and property of the company, or to secure the Province from loss by such guarantee, shall be deemed an infringement of the rights of the company.

V. And whereas the proposed railway between Halifax and Quebec will be a great national work, linking together the several portions of the British empire on the continent of North America, and facilitating the adoption of an extensive, wholesome

and effective system of emigration and colonization, and it is right that Canada should render such assistance as her means will admit of towards the accomplishment of a work so important, and promising results so beneficial; Be it therefore enacted, That if her majesty's government shall undertake the construction of the said railway, either directly or through the instrumentality of a private company, it shall be lawful for the governor in council, on behalf of this Province, to undertake to pay yearly, in proportion as the work advances, a sum not exceeding twenty thousand pounds sterling, towards making good the deficiency (if any) in the income from the railway, to meet the interest of the sum expended upon it, and to place at the disposal of the imperial government all the ungranted lands within the Province for the line of the railway, and for proper stations and termini.

VI. And be it enacted, That any lands to be taken under the provisions of the next preceding section, for the purposes therein mentioned, shall be deemed to be lands required for public provincial works, and may be taken by the commissioners of public works under the provisions of the act passed in the ninth year of her majesty's reign, and intitled, *An Act to amend the Law constituting the Board of Works*, and of any act amending the same.

VII. And be it enacted, That any moneys which shall be payable on behalf of the Province under any of the provisions of this act, may be paid out of any unappropriated moneys forming part of the consolidated revenue fund; and that all moneys due by any company as having been paid for them under any guarantee given under this act, shall be deemed moneys due by such company to her majesty, payable according to the provisions of this act, and the conditions agreed upon by the governor in council and such company.

Railroad Law.

S. J. COURT OF MAINE.

Cumberland Co., April Term, 1850.

James Deering in Equity—York and Cumberland Railroad Company.

This was a bill in equity praying for an injunction to restrain the defendants from further entering upon or using the plaintiff's land for the purpose of constructing their road—more especially through that portion of his homestead farm taken by the company, and lying in the town of Westbrook.

The plaintiff's bill sets forth that his farm was valuable for purposes of cultivation, and containing trees valuable for fruit and ornament—that the location of the railroad across it would injure it for these purposes, and would, if permitted to be used by the laying down of the rails and running of engines propelled by steam, constitute a nuisance.

He further contended that the act establishing the Y. & C. railroad company, which authorised the taking of the land for the purposes of the road, was unconstitutional and void, under that provision of the Constitution of Maine, Art. 1, sec. 21, which provides that "private property shall not be taken for public uses without just compensation, nor unless the public exigencies require it."

The act of July 30, 1846, sec. 1, establishing the York and Cumberland Railroad company, contained the following provisions:

"And said corporation shall be and hereby are invested with all the powers, privileges, and immunities, which are or may be necessary to carry into effect the purposes and objects of this act as herein set forth; and for this purpose said corporation shall have the right to purchase, or to take and hold, so much of the land and other real estate of persons and corporations, as may be necessary for the location, construction, and convenient operation of said railroad; and that they shall also have the right to take and use for the construction and repair of said railroad and appurtenances, any earth, gravel, stone, timber or other materials, on or from the road so taken: *provided, however*, that said land so taken, shall not exceed six rods in width, except where greater width is necessary for the purpose of excavation or embankment. And *provided also*, that in all cases, said corporation shall pay for such lands, estates, or materials so

taken and used, such price as they and the owner or respective owners thereof may mutually agree on; and in case said parties shall not otherwise agree, the said corporation shall pay such damages as shall be ascertained and determined by the county commissioners, for the county where such lands or other property may be situated, in the same manner, and under the same conditions and limitations, as are by law provided in case of damages by the laying out of highways; and the land so taken by the corporation shall be held as lands taken and appropriated for public highways. And no application to said commissioners to estimate said damages shall be sustained, unless made within three years from the time of taking such land or other property; and in case such railroad shall pass through any wood lands or forests, the said company shall have the right to fell or remove any trees standing thereon, within four rods from said road, which by their liability to be blown down, or from their natural falling, might obstruct or impair said railroad; by paying a just compensation therefor, to be recovered in the same manner as is provided for the recovery of other damages in this act. And furthermore, said corporation shall have all the powers, privileges, and immunities, and be subject to all the duties and liabilities, provided and prescribed, respecting railroads in chapter eighty-one of the revised statutes, not inconsistent with the express provisions of their charter."

The plff. contended that this section furnished no certain and adequate provisions for the payment of damages, or compensation for the property taken for the use of said company.

The plff. further contended, that if the act was constitutional, it could be construed as giving the right to take land, only on the conditions that the property so taken should be previously paid for, at such price as could be agreed upon, or such sum as could have been ascertained and awarded by the County Commissioners, or by a jury, previous to any entry thereon, except for the mere purposes of survey and location.

The title of the plff. to the land in question, and the entry thereon by the defendants for the purposes of building their road, were admitted for the purposes of the hearing, and it was further admitted that no injury had been done to the plff. beyond the mere taking of his land. No agreement for compensation had been made, nor had any proceedings been instituted by either party, for the purpose of ascertaining the value of the plff.'s land so taken at the time of filing this bill.

W. P. FESSENDEN, Esq., for the Plff.

JOHN A. POOR, Esq., for the Defts.

The opinion of the Court was pronounced orally by WELLS Judge.

The plaintiff, by his bill in equity, charges the defendants with having committed waste upon his lands, and the doing of certain acts upon the same, which are denominated in the bill a nuisance to him. He also prays for an injunction to restrain the defendants from doing any further acts upon his premises, by virtue of their charter.

The injunction is asked for at the present time without a hearing upon the general merits of the bill; and the defendants, without making an answer to the bill, admit for the purposes of the hearing in relation to the injunction, that the facts stated in the bill are true.

It is contended by the plaintiff that, if the Act incorporating the defendants, allows them to take and use his land before compensation is made to him, then the act is so far unconstitutional and void. It is quite manifest that the act, by a fair construction of its language, does authorize the taking and using of the land before compensation is made; and in case the parties cannot agree upon the damages, they are determined by the county commissioners, in the same manner and under the same conditions and limitations as are by law provided in the case of damages by the laying out of highways. The statute chap. 81, sec. 6, when real estate is taken by a railroad corporation, directs the commissions, upon the request of the owner of such real estate, to require the railroad corporation to give security to the satisfaction of the commissioners, for the payment of damages and costs which may be awarded by jury or otherwise; and it further provides that the same authority of the

corporation to enter upon and use such real estate, except for making surveys, shall be suspended until the such security is given. And the charter of the defendants confers upon them all the rights and subjects them to all the liabilities provided in chap. 81, before mentioned, not inconsistent with all the provisions of the charter. Any party aggrieved by the doings of the commissioners in estimating damages, may have a jury to determine the matter of his complaint, agreeably to chap. 25, sec. 8.

By the charter and the provisions of the statute, defendants may continue to use the real estate taken, by giving the required security.

By the Constitution of this State, it is provided, Art. 1, sec. 21, that "private property shall not be taken for public uses without just compensation, nor unless the public exigencies require it."

The Constitution does not prescribe that the compensation shall be made before the property is taken, nor when it shall be made. In times of war and civil commotions, the government may need the property of its citizens for public uses, when the emergency is so pressing, that there is neither opportunity nor means for making compensation at the time when it is taken. Lands are required for highways, turnpikes, canals and ferries, and the Acts authorizing them to be taken, have uniformly, so far as they have come to our notice, provided for compensation subsequently to be made.

But it is conceded, in cases where the owner of the land has a claim upon a town or county for damages, that there is then such a degree of certainty as will ensure the eventual payment, and that it would not be in violation of the Constitution to allow the property to be taken, where a public corporation would be liable for the compensation subsequently to be made.

But even in those cases, the compensation would not be absolutely certain, for governments are subject to revolutions, and they may fail of making payment. As all future earthly events are doubtful, if the payment provided, though not absolutely certain, may still be constitutional, can anything more be required than a reasonable certainty of it?

The law does not prescribe the kind of security with which the commissioners may be satisfied.

They may require a deposit of public stocks and the securities of a town, city, state, or of the United States. But they may require security of a less satisfactory character, and it may entirely fail, and the owner be subject to great injury, though not at the ultimate loss of his land.

This is strictly a Constitutional question of great magnitude, not only affecting the plaintiff, but having an important bearing upon the interests of others. Before the injunction can be granted, we must decide the act, incorporating the defendants, to be unconstitutional and void. And this decision we are called upon to make upon a mere interlocutory proceeding, without sufficient opportunity for examination and deliberation.

In the case of Moor vs. Veazie, the plaintiff asked for an injunction on the ground that the charter under which he acted was constitutional, and it was presumed to be so, so far as to authorize a temporary injunction. In that case, the charter was claimed to be valid; here, to be invalid; there we could grant what was asked, assuming the act to be in accordance with the Constitution; here we cannot do it, without deciding the act to be in opposition to the Constitution.

As we assumed in that case, the constitutionality of the Legislative Act, as we must in this, so far as relates to the application for an injunction at the present time. The same rule, which authorized it to be granted in that case, requires in this, that it should be refused. We base our conclusion upon the rule that an act of the Legislature ought not to be decided to be unconstitutional, upon a preliminary hearing of this nature, before an examination of the general merits of the bill.

We therefore decline at present from expressing any opinion in relation to the validity of the defendants' charter. We have stated enough to show what the question is, and that it is one requiring very great consideration, and the most careful and attentive investigation. It must take the ordinary course of judicial proceedings, and will be decided, if the nature of the case requires it, upon the final disposition of the plaintiff's bill.

The injunction is denied.

UNITED STATES CIRCUIT COURT,
Northern District of New York.

Ross Winans vs. Troy and Schenectady Railroad Company—Canandaigua, June Term, 1850.

This was an action brought by Ross Winans, of Baltimore, Md., for the violation of a patent granted to him, Oct. 1, 1834. The subject matter of the patent is the eight wheel passenger and burden car in general use on railroads throughout this country.

For the defence it was contended that the patent was void, for first, the want of novelty; second, for an imperfect specification; third, for an imperfect claim; fourth, for the want of a legal compliance with the statute; and fifth, on the ground of abandonment.

To prove the first two points, several English scientific works were brought forward, and numerous railway engineers, superintendents and experts, living in Washington, Boston, New York, Auburn, Buffalo and Batavia, gave in their testimony.

The trial occupied the attention of the court during eight days, and was finally given to the jury after an able charge from his honor, Judge Conkland, on Friday evening. After a short absence, they came in with a verdict for plaintiff.

The trial was regarded as a test case between the plaintiff, patentee, and the railroad co., defendants, it being agreed among the several companies of this State, that they would mutually aid and jointly bear the expense.

Never have we heard so clear an exposition of mechanical principles, or more stirring eloquence, than was exhibited during the progress of this case.

For the plaintiff—Hon. J. A. Spencer, C. M. Keller and S. Blatchford, Esqs.

For the defendants—Hon. S. Stevens, David Butler, Jr. and A. Worden, Esqs.—*Albany paper.*

Can a Speed of Seventeen Miles an Hour be Attained in Ocean Steamers?

In our last issue we gave to our readers the plan set forth by the enterprising people of Maine for the purpose of shortening the time of passage between New York and London. Since then we have received a printed copy of the same, bearing the imprint of the Legislature of Maine, accompanying which is a finely executed map, showing the entire line between Washington and Paris, as the same is passed in sailing upon the great circle, or as the same may be passed by carrying out the plan proposed.

We have also the document in a pamphlet form, to which are appended some very valuable notes illustrating or enforcing the suggestions contained in the original petition. In support of the assertion, that a speed of seventeen miles an hour can yet be reached in ocean steamers, the following note is given.

Within the last ten years considerable changes have been made in the proportion and dimensions of the vessels navigating the Hudson river; all these changes having a tendency to augment their magnitude and power, to diminish their draft of water, and to increase the play of the expansive principle. Increased length and beam have been resorted to with great success. Vessels of the largest class now draw only as much water as the smallest drew a few years ago; 4 feet 6 in. is now regarded as the maximum. In the following table is exhibited the dimensions and other particulars of nine of the most efficient and most recently built steamers plying on the Hudson and its adjoining waters.

NAME.	Dimensions.						Engine.	Paddle wheel
	Length.	Beam.	Depth of hold.	Tonnage.	Diam. of cylinder.	Length of strokes.		
Isaac Newton.....	feet	f.in	f.in	f.in	in	f.in	f.in	in.
Bay State.....	333 40	4 10	0	....	81 12	184 39	0 12	4
Empire State.....	300 39	0 13	0	....	76 12	214 38	0 10	32
Oregon.....	304 39	0 13	6	....	76 12	214 38	0 10	32
Hendrick Handson	306 35	0	....	....	72 11	183 34	0 11	0
C. Vanderbilt.....	320 35	0	9 6	1050	72 11	182 33	0 11	33
Connecticut.....	300 35	0 11	0	1075	72 12	213 35	0 9	0
Commodore.....	300 37	0 11	0	....	75 13	213 31	35 0 11	6
New World.....	290 33	0 10	6	....	65 11	182 31	35 0 9	0
Albion.....	376 35	0 10	0	....	77 15	182 44	6 12	0
Albion.....	326 28	0 9	6	....	56 12	204 32	0 10	0
Albion.....	326 28	0 9	6	....	56 12	204 32	0 10	0

It is not only in dimensions that steamships have undergone improvements. The exhibition of the beautifully finished machinery of the English Atlantic steamers did not fail to excite the emulation of the American engineers and steamboat proprietors, who ceased to be content with the comparatively rude though efficient structure of the mechanism of their steamboats.

All the new and largest class of steamers, such as the Isaac Newton, the Hendrik Hudson, the New World, the Oregon and the Alida, are capable of running from 20 to 22 miles an hour, and make, on an average, 18 miles an hour without the least effort. These extraordinary speeds are obtained usually by rendering the boilers capable of carrying steam from 40 to 50 lbs. pressure above the atmosphere, and by urging the fires with fan-ners, worked by an independent engine, by which the furnaces can be forced to any desired extent.

The great power developed by these river engines according to Dr. Lardner, is due, not so much to the magnitude of their cylinders, as to the pressure of steam used in them. The *New World*, one of the most recently constructed boats, has a cylinder 76 inches in diameter, and 15 feet stroke. The steam has 40 lbs. pressure in the boiler, and is cut off at half stroke. The wheels, which are 45 in diameter, make 16 revolutions per minute. The speed of the circumference of the wheel will therefore be 25 miles an hour; so that, if the speed of the boat be 20 miles an hour, we have the difference, five miles, giving the relative movement of the edge of the paddle boards through the water.—Prof. Ewbank, Commissioner of Patents, and other able writers contend, that a greatly increased speed will be attained by adopting an improved system of paddle wheels.

Ocean Steam Navigation.

The same pamphlet gives the following interesting statements in regard to the progress, capacity of boats, and present arrangement of ocean steamers between the United States and Europe.

Three years ago ocean steam navigation was entirely in British hands. Two years since the only line of American steamships afloat suited to ocean navigation in the merchant service, consisted of the two small boats running between New York and Charleston and the Washington, the first in the Bremen line. There are now six large steamers running regularly between New York and Chagres. There are an equal or greater number on the Pacific side, and existing projects contemplate *frequently* in all within a year for the Pacific seas. There are lines also to New Orleans, Havana, Savannah, Charleston, in addition to those named in the above list, and every ship yard and machine shop in New York city is tasked to its utmost capacity in this branch of service. There are no less than 17 ocean steamers on the stocks at the present time in New York city.

The competition between the American and English lines will soon call into use the best skill of both countries. The recent voyages of the Atlantic—the first of Collins' line—and of the Asia, the last of Cunard's boats, show that an increase of speed may still be expected in ocean steamers.—That route, or that line, which shall reduce the voyage to Europe to the shortest period of time, will be the most successful.

Ocean Steamers to run between the United States and Europe in 1850.

NAMES.	Tonnage.	Length.	Breadth.	Cost.	Diam. of cylinder.	Length of stroke.	Diam. of paddles.	Capacity of engine in horse power.
<i>Collins' Line.</i>					In ft.			
Atlantic	3000	290	46	650,000	95	9 35		769
Pacific	3000	290	46	650,000	95	9 35		760
Baltic	3000							
Arctic	3000							
Adriatic	3000							
<i>Cunard's Line.</i>								
Caledonia	1250							500
Hibernia	1400							550
Cambria	1400							550
America	1800	275	40					700
Canada	1800	275	40					700
Niagara	1800	275	40					700
Europa	1800	275	40		90	8 32		700
Asia	2250	300	42		96	9 36		800
Africa	2250	300	42		96	9 36		800
<i>Harve Line.</i>								
Franklin	2500	260	42	350,000	94	8 31		
Harve	2500			450,000				
<i>Bremen Line.</i>								
Washington	1750	230	39		72	10 35		
Hermann	1850	235	40		72	10 35		
<i>Glasgow Line.</i>								
Glasgow City	1600							350
<i>Galway Line.</i>								
Viceroy								

**Would a Railroad from Bangor, Me., to Cape
Canso or Halifax, Nova Scotia, pay?**

The memorial before referred to contends that a business equal to 100 through passengers a day each way, would pay a good return upon the investment. In aid of this assertion, the following information is given in regard to the London and Northwestern railway; and the conclusions drawn from a comparison of the business of that road with the assumed business of the proposed line is given in the following note.

The London and Northwestern railway company was incorporated July 16, 1846, by which act several distinct lines were incorporated into one, and included the following lines, viz:

Liverpool and Manchester.....	31 miles.
Manchester and Birmingham.....	31
Birmingham to Newton.....	83
Macclesfield branch.....	10
Northampton and Peterborough.....	47½
Bedford and Bletchley.....	16½
Leamington and Coventry.....	9½
Aylesbury.....	7
Bolton and Leigh.....	10
Chester and Crewe.....	21
London to Boxmoor.....	24½
Boxmoor to Tring.....	7
Tring to Denbigh Hall.....	16½
Birmingham to Rugby.....	29
Denbigh Hall to Rugby.....	33½

378½ mls.

<i>Since opened:</i>	
Trent Valley (Sept. 18, 1847).....	49½
Dunstable, (May 29, 1848).....	7
Huddersfield and Manchester, and Leeds and Dewsbury line, (Aug. 1, 1849)....	43½
Total	478½

Leased lines:

Chester and Holyhead.....	80
Kendal and Windermere.....	91
Shrewsbury and Stafford.....	29
Preston and Carlisle.....	90
Preston and Parkside.....	22

Grand total.....710 miles.

The London and Northwestern railway is *par excellence* the great railway of the world. In addition to the lines owned and leased, it controls indirectly the traffic of some 400 miles in addition.

The returns of this company for the year ending June 30, 1849, show the following facts:

Number of engines in use.....	457
No. of miles run by passenger engines.....	4,649,556
" " freight.....	2,882,674
" " both classes.....	7,532,230
Average daily run of engine.....	45 miles
Actual running of each engine per trip.....	90
Average speed of trains per hour.....	28
Passenger coaches owned—1st class.....	451
" " " 2d class.....	116
" " " 3d class.....	229

The company owned June 30th, 1849—

Box freight cars.....	6,395
Platform cars.....	228
Horse boxes.....	246

For the 12 months ending June 30, 1847, on 428 miles road, the tons of goods carried were, 1,411,080

Average distance of each ton carried	694 miles.
Average number of tons carried daily	631
Number of passengers carried daily—1st class.	366
2d class.	478
3d class.	345

Average daily	1183
Av. No. passengers to each engine—1st class, 14.5	
“ “ “ “ 2d class, 19.3	
“ “ “ “ 3d class, 14.6	

Total			48. 4
Av. dist. travelled by pass.—1st class..	57. 6.	miles	
“ “ “	2d class..	31. 3.	
“ “ “	3d class..	23. 0.	

Average distance 32. 2.

An average of 1183 passengers carried 32.2 mls daily, is equal to 38,092 carried one mile. Assuming a business equal to 100 through passengers from Bangor to Canso each way daily, 400 miles it is equal to 89,000 passengers daily, or more than twice the average travel on the London and North western railway.

Add 100 daily passengers to the present business of the 383 miles of railway from Galway to London (allowing one half to stop short of London) and you add to the business of these roads an amount nearly equal to the average daily business of their lines.

Assuming the cost of a road from Bangor to Can-
so at \$30,000 per mile, and it requires a capital o
\$12,000,000 to complete it. This would require a
net income of \$720,000 to give a 6 per cent. divi-
dend.

The *through* business alone, estimated 100 passengers a day each way, and the mail pay at \$300 per mile—the same now paid on 1st class roads in the United States—would be as follows:

200 passengers, 400 miles, at 3 cents per mile, is	
\$2,400 per day, annually producing....	\$876,000
400 miles mail pay, \$300 per mile.....	120,000

Equal to.....\$996,000

The cost of running long through trains would be less than the average cost of ordinary roads in this country.

The cost of running trains on the Portland, Saco and Portsmouth railroad, has been accomplished at 42 cents per mile.

The average number of passengers per train in the United States is estimated at 54.

The average number of miles each passenger travels is estimated at 18 miles.

Assuming the cost of running trains at 50 cents a mile, on 800 miles daily, it would cost annually..... 146.00

Leaving a net income for carrying 200—	
through passengers, with the mails, per	
day	\$850 00

The freight and way business to be added to the estimate.

AMERICAN RAILROAD JOURNAL.

Saturday, July 13, 1850.

Bowling Iron. Stamped B.O.

Railway Fire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

To our Subscribers.

The half year of the present volume of our paper has elapsed, and we should esteem it a favor on the part of our subscribers if they would forward the amount due for the current year. As they are widely scattered over the whole country, we cannot call upon them personally or by agent; and they will readily understand the favor done to us by forwarding the amount by mail.

Canada.*Toronto and Lake Simcoe Railroad.*

We see by the Canada papers that the people of Toronto have refused to subscribe to the stock of the above road. We expected a different result, as we supposed and still believe that the leading property holders of the town favored the subscription. The opposition came we believe mostly from what are termed the working classes, from the fear of adding to their taxes. This is exactly reversing the mode of doing things in this country. A person who possesses the least property is in fact the most interested in railways. They diminish the cost of all the necessities of life. They give employment where none existed before, and increase the rate of wages of those employed. They constitute the most powerful stimulant that can be applied to business, and if they increase taxation, they increase in a vastly greater ratio the means of those paying it.

Such is the history of their influence in this country without an exception. The railroad benefits the rich, but not in the same proportion nor in the same way. It increases the value of his property, but may not add to his luxuries or comforts. He says:—"I have got enough to live upon, and I do not wish to hazard it for the sake of getting more." Again, men are usually selfish in proportion as they are rich. They are to be sure desirous of increasing the value of their property by the construction of these works, but they wish other people to build them and run all the risk, while they reap the benefit. The rich never subscribe for these works so liberally in proportion to their means as those who possess only a competency, or a small amount of property. To make them subscribe, "to bring them up to the work," is one of the reasons given for subscriptions by counties and cities. In such cases as all are taxed in proportion to their property, all are thus made to subscribe in this indirect way in proportion to their means.

Our Canadian friends do not seem to appreciate the value of these works, as agents in the creation of wealth, or in promoting the growth of a country. So great is this influence, that the construction of a road by one town involves a necessity of their construction by all other towns which are any way its rivals, and purely as a matter of self defence, to enable them to maintain the same relative position that existed before the introduction of these works. So superior are the means of transportation and travel furnished by them over the old way, that

those constructing them are able to draw to themselves the business once shared between many others. No State affords a more complete and perfect illustration of this than Massachusetts. Boston, by virtue of superior enterprise and capital, first engaged in railroads. As soon as her leading lines were finished, she drew to herself the trade formerly shared in common with a great number of smaller towns. The trade of such places grew less and less, but happily they discovered the cause before it was too late to remedy the evil. All commenced the construction of works similar to those which had accomplished so much for Boston. Each New England seaport of over 6,000 inhabitants has now its railroad, and has by virtue of it, recovered the trade of its back country which it had lost, and these smaller towns are now showing from a similar cause, as great relative growth as ever—Boston exhibited.

Now our Canada friends will be compelled to resort to the same means to maintain their position, and to enable them to keep pace with the growth of this country, that the people of the States have made use of. If they fail to do so, their stationary condition will, to those moving much more rapidly, have the appearance of retrocession. There is no alternative but to move one way or the other.—It may require some effort and labor, in fact it will require a vast deal of effort, labor and expenditure, and impose the disagreeable necessity of waking up from a state of inaction that habit has made agreeable; but such a course is one of the necessities imposed by the progress of the race, and any community that does not respond to the demands of the age shows itself wanting in the noblest attributes of our nature.

Lake Superior Copper Region.

Our readers will find an interesting communication in our present number from Mr. Hodge, who is spending the season in the copper region superintending the operations of some of the most important mines. We hope to hear from him often, as the interest attached to the mines of Lake Superior is second only to that felt for the gold mines of California. If the discovery of the latter form an era in gold mining, the former mark a no less important one in copper. We are happy to say that copper mining bids fair to become much more profitable, and is not attended by that loss of life and health which has pursued those seeking the more precious metal.

Antiquity of the Electric Telegraph.

In Arthur Young's Travels in France from 1787 to 1789, published at Bury St. Edmunds in 1792, we find the following passage, which clearly points out the discovery of the principle and the practice of the electric telegraph:—"In electricity he (M. Lomond) has made a remarkable discovery—you write two or three words on a paper, he takes it with him in a room, and turns a machine enclosed in a cylindrical case, at the top of which is an electrometer, a small fine pith ball; a wire connects with a similar cylinder and electrometer in a distant apartment, and his wife, by remarking the corresponding motions of the ball, writes down the words they indicate, from which it appears that he has formed an alphabet of motions. As the length of wire makes no difference in the effect, a correspondence might be carried on at any distance—within or without a besieged town, for instance, or for a purpose much more worthy and a thousand times more harmless, between two towns prohibited or prevented from any better connection."

Experiments with Galvanized Wire and Hemp Ropes.

Experiments have been tried in Woolwich Dockyard to ascertain the comparative strength of wire and hemp ropes. A wire rope, 3 inches round, and a hemp rope of 3 strands, hawser laid, common make, 7 inches round, were spliced together, and placed in the testing machine, and on the hydraulic power being applied the hemp rope broke in the middle on the strain reaching 11½ tons, the wire rope remaining apparently as strong as when the experiment commenced. A wire rope, 3½ inches round, was then spliced with an 8-inch hemp shroud rope, and on the power being applied the hemp rope broke in the middle with a strain of 10½ tons, the wire rope continuing apparently uninjured.

General Railroad Law of Canada.

We give in our present number the general railroad law of Canada, which secures the aid of the Provinces to railroad companies on certain conditions. It is a law in which our people are largely interested, as the leading roads of Canada must connect with our own, and as the public works there are largely carried on by contractors from the States.

Maryland.*Business of the Baltimore and Ohio Railroad.*

The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of June, 1850.

The transportation eastwardly into the city of Baltimore, on some of the principal staples has been as follows:

Bark	228 tons.
Coal	11,902 "
Fire brick	36 "
Flour	39,448 bbls.
Grain	221 tons.
Granite	820 "
Iron	518 "
Iron ore and manganese	257 "
Leather	75 "
Lime	3 "
4790 hogs	357 "
230 sheep	16 "
33 horses and mules	16 "
34 horned cattle	9 "
Meal and shorts	46 "
Tobacco	383 hds.
Whiskey	407 bbls.
Miscellaneous	201 tons.

The revenue for the month has been as follows:

Main Stem	\$29,768 15	\$82,484 20
Washington Branch ..	21,168 03	6,027 59
	\$50,936 18	\$88,511 79

Making an aggregate of \$112,252 35 on the Main Stem, and \$27,195 62 on the Washington Branch—the total being \$139,447 97.

The above shows an increase over the corresponding month of last year of \$15,542 13 on the Main Stem, and \$4,986 43 on the Washington Branch—making an aggregate increase on both roads of \$20,528 56.

Tennessee.

Nashville and Chattanooga Railroad.—The whole of this road we learn is now under contract.

The Alp Tunnel.

Its northern entrance is to be at Modane, the southern at Bardonecche, on the Mardovine. The latter entrance, being the highest point of the line, will be 4092 feet above the level of the sea, and yet 2400 feet below the culminating point of the great mass over Mont Cenis. The connecting lines leading to either entrance of the tunnel will be eight inclined planes of about 5000 metres, or 24

English miles, each, worked like those at Leige, by endless cables and stationary engines, but moved by water power from the torrents. The tunnel itself will measure 12,260 metres, or nearly seven English miles in length; its greatest height will be 19 feet, and its width 25. A most remarkable part of the project is the newly devised machinery and motive power by which the Chevalier Maus proposes to bore it. This machinery is said to be as ingenious as it is new, presenting, as a correspondent of the *Times* states, some extraordinary facts in mechanics which could hardly have been anticipated. In comparison with such a gigantic undertaking as this, the Thames tunnel and the Britannia bridge become secondary objects. An application for funds to begin with will be made to the Piedmontese Parliament forthwith, and the work, which it is expected will occupy five years, will cost 14,000,000*f.*; while the entire railway of the Alps, connecting the tunnel with the Chambery railway on the one side, and with that of Susa on the other side (in length together 36,565 metres, or 20½ English miles) will cost 21,000,000*f.* more, forming a total expense of 35,000,000*f.*

Railroad Celebration at Burlington.

The railroad fraternity of New England have recently had a grand jubilee at Burlington, Vermont. Judge Follett, President of the Rutland road, was President of the day. Speeches were made by Judge Follett, Governor Paine, Josiah Quincy, Jr., and Col. Schouler, of Boston, Mr. Crocker, of Fitchburg, Gen. Low, of Concord, and by others.

On the same day there was an Editorial meeting, which was attended by a goodly number of gentlemen connected with the Press, from New England and New York. Gen. Clark, of the Burlington Free Press, called the meeting to order, when Col. Schouler, of the Boston Atlas, was chosen President, and Mr. Butterfield of the New Hampshire Patriot, and H. J. Hastings of the Albany Knickerbocker, Secretaries.

Gen. Clark represented the object of the meeting to be to cultivate a friendly feeling amongst those engaged in the same important calling, and "to have a good time." Numerous speeches were made, abounding in anecdote and witticism, which gave much life and glee to the occasion. Mirth-making and laughter were decidedly in the ascendant during the whole time.

Canada.

Great Western Railway.—Our readers will be pleased to learn that an arrangement is on the point of being effected by which we shall effectually get rid of the opposition of the rival road, and secure, we trust, the immediate prosecution of a work in which the whole country is interested.

The basis of the compromise are briefly as follows: The projectors of what we have called the frontier line, may unite with the Great Western at any point within twenty miles of Brantford (westward) and construct their branch to Bertie; but the whole of the grading is to be completed by the 1st of January, 1852, or the charter expires.

The Great Western to retain their present line, and grade fifty miles of the road immediately adjoining (westward) the point to which the Bertie people proceed.

In June, 1853, the Great Western company are to complete the grading of the whole line from Hamilton to Windsor.

In default, the frontier company are to take pos-

session of the surveyed route of the Great Western company, and complete the road, on paying to the Great Western company any expenses which they have incurred, and may incur.

These are the terms of the compromise, and we are certain our Hamilton and Western readers will be perfectly satisfied with it. The Great Western company are to have all that they contended for, while the frontier people are bound to build a branch to the Niagara river, or abandon their pretensions.

We have now but to go to work with vigor and a determination to build the road.

The bill to enable municipalities to take stock in the Great Western railway, as slightly amended in the Council, was agreed to by the House on Thursday evening.—*Hamilton Spectator.*

South Carolina.

South Carolina Railroad—Reduction of Freights.

—We would call attention to the new tariff of rates of the South Carolina railroad company, between Charleston and Hamburg and Augusta, to go into effect on and after this day. It will be perceived that freights have been materially reduced on many leading articles, especially groceries and other heavy goods. On sugar, coffee, iron, nails and other articles in the fourth class, the freight to Hamburg is reduced to 15 cents per 100 lbs. and articles in the second class to 20 cents; while salt, molasses, pipes, hogsheads and barrels, and many other specific articles are reduced in a corresponding ratio.—*Charleston Mercury.*

Georgia Railroads.

We copy the following from the Savannah Republican relative to the roads in Georgia:

The Central Road.—In addition to the iron already ordered for this road, much of which is laid down, one thousand tons more of a beautiful and massive T rail have just been ordered. More iron will be purchased from time to time, so as to continue the process of reconstruction, as rapidly as the wants of the road and a sound economy shall dictate.

The Milledgeville and Gordon Road.—Mr. Demming, the President of this road, has taken hold of its affairs with energy, perseverance and sound forethought. After procuring some \$25,000 additional subscriptions at Milledgeville and in its vicinity, he has come to Savannah to obtain the residue sufficient to insure its construction. We are happy to announce that he has succeeded in his object. Our banks have advanced the money required, receiving the bonds of the corporation of Milledgeville as security. Its construction is now placed beyond contingency, and it will be completed in one year from the first of September next.

Macon and Western Railroad.—We learn from an authentic source that the Macon and Western railroad is to receive forthwith a new and heavy T rail throughout its entire length. Our readers will doubtless remember that twenty-five miles of new iron was procured for this road some time since. The iron is nearly all laid down, and the new order is for iron enough to relay all the rest of the track. This new supply is to be delivered at this port at \$39.50 per ton. The whole is to be laid down on cross-ties near together, without the longitudinal stringer, which system, with the rail adopted, will place the Macon and Western on a par with the best class of American roads. When the track is re-laid, it is expected to measure the distance with passenger trains between Atlanta and Macon in three and a half hours, including stop-

pages, of course. This will leave to the Central road seven or seven and a half hours for its one hundred and ninety-one miles, including stoppages, and one hour to stop at Macon—the whole distance from Savannah to Atlanta being thus accomplished with great ease in less than twelve hours.

Commerce of New York.

Imports, year ending June 30th, 1850.

	Dutiable.	Free.	Specie.	Total.
July,	\$8,469,423	537,803	327,007	9,334,233
Aug.	13,061,344	707,633	60,739	13,829,716
Sept.	7,887,190	226,188	489,435	8,602,813
Oct.	5,888,881	165,303	572,614	6,626,798
Nov.	4,548,056	429,251	533,715	5,511,022
Dec.	4,407,715	362,858	1,381,824	6,152,397
Jan.	11,446,496	437,270	433,882	12,317,648
Feb.	7,723,961	662,993	581,362	8,968,316
Mar.	8,149,821	1,364,182	907,634	10,421,637
April,	9,311,661	1,674,330	1,695,598	12,681,589
May,	8,235,872	808,216	2,883,623	11,927,711
June,	9,229,205	514,851	1,234,682	7,978,738

\$95,359,625 7,890,878 10,502,115 113,752,618

Exports, year ending June 30th, 1850.

	Dutiable.	Free.	Specie.	Total.
July,	\$2,953,630	419,979	138,352	3,511,961
August,	1,965,113	343,704	359,368	2,668,185
September,	1,808,500	416,895	336,384	2,561,779
October,	1,746,739	393,189	1,830,518	3,970,446
November,	3,684,087	309,063	634,898	4,628,048
December,	2,062,734	638,342	141,973	2,843,049
January,	2,223,910	946,981	90,161	3,261,052
February,	3,188,994	324,395	278,786	3,792,175
March,	2,865,634	270,310	172,087	3,308,031
April,	3,146,151	499,971	200,407	3,936,529
May,	3,610,977	346,632	741,735	4,699,344
June,	3,971,207	494,380	880,434	5,346,021

\$33,227,676 5,433,841 5,885,103 44,546,620

The following is a similar statement for the previous year:

Imports, year ending June 30th, 1849.

	Dutiable.	Free.	Specie.	Total.
July,	\$7,046,389	650,055	61,631	7,761,075
Aug.	9,796,778	1,128,555	138,855	11,064,188
Sept.	8,168,234	513,719	197,098	8,879,141
Oct.	5,136,332	439,587	127,998	5,703,917
Nov.	4,518,565	185,970	104,971	4,809,506
Dec.	3,251,910	283,755	70,488	3,606,153
Jan.	7,833,710	525,534	57,700	8,416,944
Feb.	8,257,786	285,117	21,323	8,564,226
March,	7,928,470	591,849	130,895	8,651,214
April,	5,808,158	2,192,798	638,746	8,639,702
May,	5,779,628	887,180	1,137,932	7,804,740
June,	5,057,273	344,430	122,713	5,524,416

\$78,583,323 8,023,579 2,813,380 89,420,282

Exports, year ending June 30th, 1849.

	Dutiable.	Free.	Specie.	Total.
July,	\$2,139,125	112,479	74,983	2,326,587
August,	2,230,909	189,206	331,631	2,751,746
September,	2,926,213	217,267	561,445	3,704,925
October,	3,576,051	246,713	882,423	4,705,187
November,	3,695,287	201,378	482,186	4,378,851
December,	2,616,787	407,265	365,878	3,389,930
January,	2,109,059	152,590	223,582	2,485,231
February,	2,190,649	351,378	106,851	2,648,878
March,	2,687,803	330,591	86,506	3,104,900
April,	2,655,819	347,135	85,691	3,088,645
May,	3,020,861	551,991	373,916	3,946,768
June,	3,317,740	445,892	506,411	4,269,043

\$33,166,339 3,553,885 4,739,903 41,460,127

RECAPITULATION.

We annex the recapitulation of the totals, with the addition of the two years next preceding the above.

Imports of Four Years.

	Dutiable.	Free.	Specie.	Total.
1850,	\$95,359,625	7,890,878	10,502,115	113,752,618
1849,	78,583,323	8,023,579	2,813,380	89,420,282
1848,	82,312,451	8,183,026	1,173,406	91,668,883
1847,	65,203,532	9,082,713	8,307,350	82,593,625

Exports of Four Years.

	Domestic.	Foreign.	Specie.	Total.
1850,	\$33,227,676	5,433,841	5,885,103	44,546,620
1849,	33,166,339	3,553,885	4,739,903	41,460,127
1848,	33,637,844	2,693,597	12,028,794	48,360,235
1847,	43,021,382	2,616,572	905,841	46,543,795

North Carolina.**Wilmington and Roanoke Railroad.**

Something like sixty miles of the railroad, more than one-third of its extent, have been relaid with the heavy T iron now being imported by the company. The larger portion of the relaid track is on the lower half of the road, between this and Goldsboro'. The workmen are going on with the relaying with all practicable dispatch. Two fine 8 wheeled passenger cars for the road have just been turned out of the company's car shop here. They are "home-made" throughout.

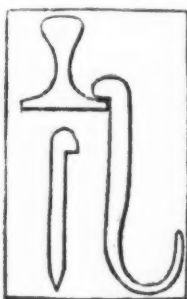
Indiana.

Union Track.—The Union track running around the east and south sides of Indianapolis, connecting the four railroads that have been located to that place together, is now finished, and the locomotives and cars are daily passing from the Madison road over the track with rock for the bridge over White river for the Terre Haute road, and with lumber and iron for the Bellefontaine road.

Terre Haute Road.—The company are prosecuting the grade of this road with energy. They purpose completing the entire grading and bridging this season, from Indianapolis to Terre Haute, preparatory to laying the iron next year.

Peru and Indianapolis Road.—The superstructure of this road is now being laid from the north end of the Union track, and the company expect to have the road in use to Noblesville this season, and to contract for the clearing off of the timber and grubbing the balance of the line to Peru.

Lafayette and Indianapolis Road.—The Lafayette Journal says that there is a better prospect of the completion of this road than has been anticipated for some time past. The directors were in session on the 11th ult., and resolved to go on with the grading of the road from Lebanon to Indianapolis, the letting of which will be given out in the course of two or three months.

Patent Self-clinching Railroad Spikes.

These spikes have been in use upon various roads for several years, and have met with universal approval by Engineers. They drive in the manner shown, turning themselves, and are therefore not liable to work loose. They will prove of great value to secure the chair.

We are also manufacturing railroad spikes, hook and flat head; wrought chairs, clamps, etc., of superior quality, and are prepared to contract for any pattern or weight upon favorable terms.

SMITH & TYSON,
25 South Charles st., Baltimore Md.

NORRIS' LOCOMOTIVE WORKS, SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pumps and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tire Bars bent and welded with dispatch.

Chilled Wheels for Cars, Trucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by
April 11, 1849. E. S. NORRIS.

Ray's Patent India Rubber Car Springs.

Savannah, Ga., May 22, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: I have no hesitation in saying, after having used on our road your springs and Fuller's, that I consider yours decidedly the best in every particular, and in this opinion I am sustained by all our officers. Fuller's spring has a tendency to split, and also to chafe or abrade by the constant friction on the cast iron plates or disc: and in my opinion is not near so elastic as yours.

Your springs, which have been in use on our road for 12 or 15 months past, and in constant use under both passenger and freight cars, are to all appearances as elastic, sound and good, as when first put in use.

We are now building eighty-five new cars, of which for fifty-sets the springs have been ordered of you.

GEORGE A. ADAMS,

Master Carpenter,

Central Railroad and Banking Co. of Georgia.

Connecticut River Railroad Office, }
Northampton, May 4, 1850. }

E. CRANE, Esq.,

Dear Sir: It is now about two years since I first tried the experiment of using a set of Ray's India-rubber Springs upon one of our merchandise cars, and although the car has been in constant service since that time, I do not on examination find the slightest difference either in the thickness or elasticity of the material.

The same result has followed wherever we have applied them, either for wheel or draw springs on Engines, Tenders or Cars. At present we use no other; either in replacing old springs or building new cars—and I am perfectly satisfied that for economy durability, safety, and ease of motion, that Ray's India-rubber is the best article for Springs which has been presented to the public.

Yours respectfully, J. HUNT,
Supt. Connecticut River Railroad.

EDWARD CRANE, Esq.,

Dear Sir: Having applied to cars of the Boston and Worcester Railroad Corporation, Ray's Vulcanised Rubber Springs (where they have been in use for some two years last past), I have had occasion to observe their operation, and am free to say in answer to your inquiries, that they retain their elasticity perfectly during all changes of atmospheric temperature; and are in my opinion a most valuable acquisition to Railroad Cars—are not liable to derangement, as is the case with steel springs; while at the same time it costs less to apply them. Respectfully yours,

D. N. PICKERING,

Supt. Motive Power, Bost. & Wor. Railroad.
Boston, April 15th, 1850.

**NORTHERN RAILROAD, NEW YORK.**

CARS run between Rouses Point and Chateaugay daily, Sundays excepted, as follows:

Leave Rouses Point at . . . 3 1/4 A.M.
Leave Chateaugay at . . . 6 1/4 P.M.

On the arrival of the cars at Chateaugay, stages are in readiness to take the passengers to Ogdensburg, where they arrive the same day.

Passengers leave Ogdensburg in the morning by stage, and take the evening train from Chateaugay to Rouses Point, where they go immediately on board the steamboats which run north and south on Lake Champlain.

Passengers leaving New York in the evening by the way of Whitehall, will arrive at Rouses Point the next night, and the next morning pass directly from the boat to the cars, and arrive at Ogdensburg the same day.

CHARLES L. SCHLATTER, Supt.

Ibbotson, Brothers & Co's CELEBRATED CAST STEEL

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY J. IBBOTSON, Agent,
218 Pearl st., New York.

NOTICE.

A young man of experience in Surveying wishes a situation on a Railroad as an Assistant. Please apply at this office.

Election of an Engineer.

At a Meeting of the Board of Directors of the Virginia Central Railroad Co. at Charlottesville on the 4th day of June, 1850,

Resolved, That the election of a Chief Engineer in the place of Wm. A. Kuper, whose resignation has been accepted, is postponed to take place in Richmond on Tuesday the 18th of June instant.

A copy from the minutes.

JOHN GARRET, Secretary.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

American Railway Guide, AND POCKET COMPANION FOR THE UNITED STATES;

CONTAINING Correct Tables, showing the time for starting of trains from all stations, distances, fares, etc., on all the Railway lines in the U. States; also many of the principal Steamboat and Stage routes—accompanied by a complete RAILWAY MAP. Price, single copies 12 1/2 cts., or \$1 per annum. Published on the first of every month, corrected from returns furnished by the Railway Superintendents throughout the Union.

This book has been compiled somewhat on the plan of Bradshaw's Guide, with such improvements in size, form and arrangement as have seemed desirable; and the publisher confidently hopes it will not be found liable to the objections of incompleteness and incorrectness, which have been made, and justly too, against various other similar works heretofore issued.

The subscriber having had the management of the NEW YORK PATHFINDER almost from its commencement, has enjoyed superior facilities in obtaining information relating to the thoroughfares of travel, and is therefore well qualified to prosecute with success the arduous undertaking of furnishing a complete and correct national guide book.

STRINGER & TOWNSEND, General Agents, 222 Broadway: and sold also by Booksellers and Periodical Dealers generally throughout the country; also on all the Railways and Steamboats.

CURRAN DINSMORE, Publisher.

N. Y. Pathfinder Office, }
133 Fulton St., New York City. }

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fuller's Patent—Hose from 1 to 12 inches diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street.

New York, May 21, 1849.

To Railroad Companies.

FOR SALE—A Second-hand Locomotive Engine and Tender, of about 10 tons weight, in good order, and warranted to perform well. Any company wanting a cheap engine for a passenger or light burden train, will rarely meet with an opportunity so favorable as the present. The engine and tender are in perfect running order, and will be tested to the satisfaction of any one wishing to purchase. Price \$1,500.

Address

J. B. MOORHEAD,

Frazer P.O., Chester county, Pa.
P.S.—The Engine can be seen by calling on H. Osmond & Co., Car-builders, Broad st., Philadelphia.

September 6, 1849.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK,
Troy, N. Y.
March 6, 1850.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio, 75 cts. to Subscribers, One Dollar to non-subscribers.

Part VI of "Specimens of the Stone, Iron and Timber Bridges, Viaducts, Tunnels, &c. &c. of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations and sections of the Timber Bridge (three spans of 150, and one span of 160 feet) across the Delaware at Saw Mill Rift, on the line of the N. York & Erie R. R., with the specifications, estimates, bills of timber, iron, etc.

N.B.—With the present (6th) part, are given specimen Plates of the APPENDIX, (or "THEORETICAL AND PRACTICAL TREATISE ON BRIDGE BUILDING, etc. etc.") consisting of plans, elevations, sections and details of a cast iron oblique arch, 130 feet span, across Fairfield st. Manchester, on the line of the Manchester and Birmingham Railroad. Also a specimen sheet of the letter press of the APPENDIX, consisting of an introductory article on the *Application of Iron to Railroad Structures*.

"It is a work that was a great desideratum, and must prove of great benefit to the engineering profession generally, and especially to the tyro in practical engineering and mechanical knowledge; in truth it strikes us, that it would require years of labor and patient toil on the part of a young engineer to prepare the drawings, and collect the information that will be embodied in this work, and can now be secured for the trifling sum of \$9"—[Scientific Amer. March 16, 1850.]

In connection with this subject (Iron Railroad Structures) we take occasion to call attention again to Mr. Duggan's valuable and expensive publication, exhibiting drawings, with full descriptions of the various stone, iron and wooden bridges, viaducts, tunnels, culverts, etc., of all the Railroads in the United States. Mr. Duggan is an accomplished Architect and Civil Engineer, who came from Ireland to this country to exercise his profession; but finding railroad construction here, in many respects, different from that he had been accustomed to in Europe, he applied himself to the study of our system; and the fruits of his researches and investigations embodied in this work, are well calculated to meet the exigencies of engineers, and to assist draughtsmen, bridge builders, mechanics and students.—[N. Y. Journal of Commerce, Feb. 14, 1850.]

Published by **GEORGE DUGGAN**,
300 Broadway, New York.

To whom all communications should be addressed, and subscriptions forwarded.

RAILROAD CAR AND COACH TRIMMINGS.

Doremus & Nixon,
IMPORTERS AND FURNISHERS

HAVE FOR SALE

Plain Garnet Plush. | Fig. Garnet Plush (Butterfly pat.
"Crimson" " | "Crimson" (Elegant.
"Scarlet" " | " " (Gen. Taylor.

BROCADELLES.

Crimson Silk Brocades. Gold and Maroon do.
Gold and Blue " " Brown "
Silk and Wool " of every color.

MOQUETTES.

Of elegant designs and colors.

GERMAN CLOTH FOR CAR LININGS.

The most beautiful goods ever shown in this country, and the subscribers are the sole agents for the sale of them.

Oil cloths Enamelled with Gold. } These goods can be
" " Silver. } furnished in any
Do. Silver ground velvet printed. } dimensions req'd.

CURLED HAIR

Of every description and quality.
JNO. W. A. STRICKLAND, Agent.
New York, 1850. 1y16

Stickney & Beatty,
DEALERS IN IRON AND IRON
MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel and Maryland (Balt.) charcoal forge pig irons, Balt. hard iron for chilling wheels, anti-Eatam nails, Catoctin foundry iron, boiler blooms from the Caledonian works, Wm. Jessop & Son's cast steel, Coleman's blister steel and nail rods, hoop, band, sheet, oval and common English iron.

No. 18 and 20 South Charles st., Baltimore.

Fire Brick.

THE Subscribers have constantly on hand Rafford's Stourbridge, Oak Farms Stourbridge, Lister, Wortley, Red and White Welsh Fire Bricks, common and fancy shapes. Also,

ROOFING SLATES,

from the best Welch quarries, and of all sizes. Also, **COAL,**

of all kinds—Liverpool Orrell and Cannel, Scotch, New Castle, Pictou, Sidney, Cumberland, Virginia, and all kinds of Anthracite coals. Also,

Pig Iron, Salt, etc., etc., for sale at the lowest market price. Apply to

SAMUEL THOMPSON & NEPHEW,

275 Pearl and 43 Gold Sts., New York.

November, 23, 1849.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, *Railroad and Depot Scales*, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.
	New York and Erie Railroad.

And other principal Railroads in the Western, Middle and Southern States.

E. & T. FAIRBANKS & CO.

St. Johnsbury, Vt.
Agents, } FAIRBANKS & Co., 89 Water St., N. York.
A. B. NORRIS, 196 Market St. Philadelphia.
April 22, 1849. 1y*17

STABILITY—SECURITY—PERPETUITY.
Mutual Life Insurance Co. of
New York.

No. 35 WALL STREET.

A MILLION OF DOLLARS

Securely invested in Bonds and Mortgages on real estate in this city and Brooklyn, and stocks of the State and City of New York and United States Government.

The company declared a dividend of profits of fifty-two per cent. on all existing policies on the 31st of January, 1848.

All the Profits are Divided Among the Insured.
Persons may effect insurance on their own lives and the lives of others.

A married woman can insure the life of her husband, the benefits of which are secured by law for the exclusive use of herself or children.

Clergymen and all others dependent upon salaries or their daily earnings are specially invited to avail themselves of a resource whereby their surviving families may be secured from the evils of penury.

Pamphlets explanatory of the principles of Mutual Life Insurance, and illustrating its advantages, with forms of application, may be obtained at the office of the company, 35 Wall street, or of any of its agents.

TRUSTEES.

Jos. B. Collins,	Abraham Bininger,
Wm. J. Hyslop,	Alfred Edwards,
R. H. McCurdy,	Wm. Betts,
Fred. S. Winston,	Joseph Blunt,
C. W. Faber,	Isaac G. Pearson,
John P. Yelverton,	Henry Wells,
Theo. Sedgwick,	Wm. Moore,
Stacy B. Collins,	George R. Clark,
John H. Swift,	Jona. Miller,
John Wadsworth,	David A. Comstock,
S. M. Cornell,	Robert Schuyler,
Gouv. M. Wilkins,	James Chambers,
John V. L. Pruyn,	Joseph Tuckerman,
Jas. S. Wadsworth,	Moses H. Grinnell,
Charles Ely,	Wm. J. Banker,
John C. Cruger,	John M. Stuart,
Charles King,	Francis S. Lathrop,
Alfred Pell,	Nathaniel Hayden.

JOSEPH B. COLLINS, President.

ISAAC ABBATT, Secretary.

3m9

NOTICE TO**Superintendents of Railroads.**

TYLER'S PATENT SAFETY SWITCH.—The undersigned would respectfully call their attention to his Patent Safety Switch, which from long trial and late severe tests has proved itself perfectly reliable for the purpose for which it was intended. It is designed to prevent the train from running off when the switch is set to the wrong track by design or accident. The single rail or gate switch is established as the best and safest switch for the ordinary purpose of shifting cars from one track to another, but it is liable to the serious evil of having one track open or broken when connected with the other. My improvement entirely removes this evil, and while it accomplishes this important office, leaves the switch in its original simplicity and perfection of a plain unbroken rail, connecting one track with the other ready for use.

The following decision of the Commissioner of Patents is respectfully submitted to Railroad Engineers, Superintendents, and all others interested in the subject.

P. B. TYLER.

(COPY.)

UNITED STATES PATENT OFFICE, }
Washington City, D.C., April 25th, 1846. }

Sir: You are hereby informed that in the case of the interference between your claims and those of Gustavus A. Nicolls, for improvements in safety switches—upon which a hearing was appointed to take place on the 3d Monday in March, 1846, the question of priority of invention has been decided in your favor. Inclosed is a copy of the decision. The testimony in the case is now open to the inspection of those concerned.

Yours respectfully, **EDMUND BURKE,**
Commissioner of Patents.

To Philos B. Tyler.

Any further information may be obtained by addressing P. B. TYLER, Springfield, Mass., or JOHN PENDLETON, Agent, 149 Hudson St., New York.

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL
superior quality for Locomotives, for sale by
H. B. TEBBETTS,
No. 40 Wall St., New York.
May 12, 1849. 1m19

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2d AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.
Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country. Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.
Philadelphia, June 16, 1849. 1y25

C. W. Bentley & Co.,

IRON Founders, Portable Steam Engine Builders and Boiler Makers, Corner Front and Flawman Sts., near Baltimore St. Bridge,

BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupy but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,
Baltimore, June 6, 1849.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by **POWERS & WEIGHTMAN**, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

ENGINEERS.

- Atkinson, T. C.,**
Alexandria and Orange Railroad, Alexandria, Va.
- Bancks, C. W.,**
Civil Engineer, Vicksburg, Miss.
- Berrien, John M.,**
Michigan Central Railroad, Marshall, Mich.
- Buckland, George,**
Troy and Greenbush Railroad.
- Clement, Wm. H.,**
Little Miami Railroad, Cincinnati, Ohio.
- Cozzens, W. H.,**
Engineer and Surveyor, St. Louis, Mo.
- Alfred W. Craven,**
Chief Engineer Croton Aqueduct, New York.
- Davidson, M. O.,**
Eckhart Mines, Alleghany Co., Maryland.
- Fisk, Charles B.,**
Cumberland and Ohio Canal, Washington, D. C.
- Felton, S. M.,**
Fitchburgh Railroad, Boston, Mass.
- Floyd-Jones, Charles,**
South Oyster Bay, L. I.
- Gzowski, Mr.,**
St. Lawrence & Atlantic Railroad, Montreal, Canada.
- Gilbert, Wm. B.,**
Rutland and Burlington Railroad, Rutland, Vt.
- Grant, James H.,**
Nashville and Chattanooga R. R., Nashville, Tenn.
- S. W. Hill,**
Mining Engineer and Surveyor, Eagle River, Lake Superior.
- Holcomb, F. P.,**
Southwestern Railroad, Macon, Ga.
- Johnson, Edwin F.,**
New York and Boston Railroad, Middletown Ct.
- Latrobe, B. H.,**
Baltimore and Ohio Railroad, Baltimore, Md.
- Miller, J. F.,**
Worcester and Nashua Railroad, Worcester, Mass.
- Morris, Elwood,**
Schuylkill Navigation, Schuylkill Haven, Pa.
- Morton, A. C.,**
Atlantic and St. Lawrence Railroad, Portland, Me.
- McRae, John,**
South Carolina Railroad, Charleston, S. C.
- Nott, Samuel,**
Lawrence and Manchester Railroad, Boston.
- Prichard, M. B.,**
East Tennessee and Georgia R. R., Cleveland, Tenn.
- Roebbling, John A.,**
Trenton, N. J.
- W. Milnor Roberts,**
Bellefontaine and Indiana Railroad, Marion, Ohio.
- Roberts, Solomon W.,**
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.
- Sanford, C. O.,**
South Side Railroad, Virginia.
- Schlatter, Charles L.,**
Northern Railroad (Ogdensburg), Malone, N. Y.
- Sours, Peter,**
Rahway, New Jersey.

- Stark, George.,**
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.
- Steele, J. Dutton,**
Pottstown, Pa.
- Trimble, Isaac R.,**
Philad., Wil. & Baltimore Railroad, Wilmington, Del.
- Tinkham, A. W.,**
United States Port, Bucksport, Me.
- Thomson, J. Edgar.,**
Pennsylvania (Central) Railroad, Philadelphia.
- Troost, Lewis,**
Alabama and Tennessee Railroad, Selma, Ala.
- Whipple, S.,**
Civil Engineer and Bridge Builder, Utica, N. Y.
- Williams, E. P.,**
Auburn and Schenectady Railroad, Auburn, N. Y.
- Williams, Charles H.,**
Milwaukee, Wisconsin.

HOTELS.

- GUY'S**
United States Hotel,
(Opposite Pratt street Railroad Depot,) **BALTIMORE.**
JOHN GUY. WILLIAM GUY.
- American Hotel,**
Pratt street, opposite the Railroad Depot, **BALTIMORE.**
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg.
- Washington Hotel,**
BY JOHN GILMAN,
\$1 Per Day.
No. 206 Pratt street, (near the Depot,) **BALTIMORE.**
- Fountain Hotel,**
LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.
- Barnum's City Hotel,**
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**
- JONES' HOTEL,**
NO. 152 CHESTNUT STREET, **PHILADELPHIA.**
BRIDGES & WEST, Proprietors.
- DUNLAP'S HOTEL,**
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St., **NEW YORK.**

BUSINESS CARDS.

- J. T. Hodge**
Will attend to the examination of mining tracts near Lake Superior, and prepare Reports and Maps.
Address, during the Summer,
Ontonagon Postoffice, Lake Superior.
- Cumberland Steam Coal,**
FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 60 Wall Street, New York.
- Eaton, Gilbert & Co.,**
Railroad Car, Coach and Omnibus Builders,
TROY, N. Y.

Nathan Caswell,
METAL BROKER, 69 WALL ST., N. Y.
For the Purchase and Sale of Railroad Iron (new and old,) Boiler Plates, Pig and Bar Iron, Lead, Tin, Copper, Spelter, etc. Refers to
Messrs. Boorman, Johnston, & Co., New York.
" Grinnell, Minturn & Co., "
" Barston, Pope & Co., "
" Earps & Brink, Philadelphia.
" E. Pratt & Brother, Baltimore.
John Barstow, Esq., Providence.
Lewis Bullard, Esq., Boston.
February 9, 1850. 6m*

United States Railroad Guide and Steamboat Journal.

CONTAINING OFFICIAL TIME ADVERTISEMENTS, Tables of Stations, Distances, Fares, Time, etc., with much miscellaneous matter for the travelling public. Price 12 cents a copy. Yearly subscription \$1. Published at 43 Ann street, New York.

J. & Riley Carr,
Manufacturers of Cast, Shear, German and Blister **STEEL,**
Of all Descriptions, Warranted Good.
BAILEY-LANE WORKS, SHEFFIELD.

R. S. STENTON, Agent,
NO. 20 CLIFF ST., NEW YORK.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & Riley Carr's
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German and Blister **STEEL**
Of all descriptions. Warranted Good
FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.
A full Stock of Steel and Files at all times on hand. 6m4

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET, **NEW YORK.**

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE, **BALTIMORE.**

Agents for Avalon Railroad Iron and Nail Works, Maryland Mining Company's Cumberland Coal 'CED' - 'Potomac' and other good brands of Pig Iron.

Cop Waste.
CLEAN COP WASTE, suitable for cleaning Railroad, Steam-boat and Stationary Engines, constantly on hand and for sale by
KENNEDY & GELSTON,
54 Pine St., New York.
October 27, 1849, 3m

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Forge at Commercial Point, Dorchester,
Office 25 Foster's Wharf, opposite No. 211 Broad St. **BOSTON.**

Henry J. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Cumberland, (Md.,) Coals for Steaming, etc.
ORDERS RECEIVED FOR AND FILLED
by **J. COWLES, 27 Wall St., N. Y.**

**Railroad Car Manufacturer's
Furnishing Store.****F. S. & S. A. MARTINE,**
IMPORTERS AND MANUFACTURERS OF**RAIL ROAD CAR &
CARRIAGE LININGS,**PLUSHES, CURTAIN MATERIALS, ETC.,
112 WILLIAM ST., NEAR JOHN.3-4 and 6-4 Damasks, Union and Worsted; Mo-
reens, Rattinetta, Cloths, Silk and Cotton Velvets,
English Bunting**To Engineers and Surveyors.**E. BROWN AND SON Mathematical inst. mak-
ers No. 27 Fulton Slip, New York, make and keep
for sale, Theodolites, Levelling inst., Levelling rods,
Surveyors Compasses, and Chains, Cases of Mathe-
matical drawing insts. various qualities, together with
a general assortment of Ivory Scales and small insts.
generally used by Engineers.**Samuel Kimber & Co.,
COMMISSION MERCHANTS**WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
A Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.

July, 27, 1849.

James Herron, Civil Engineer,OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.

PATENTEE OF THE

HERRON RAILWAY TRACK.Models of this Track, on the most improved plans,
may be seen at the Engineer's office of the New York
and Erie Railroad.**To Railroad Companies.****—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.****NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,**Are Manufacturing Wrought Iron Driving, Truck,
Tender, and Car Wheels—made from the best Ameri-
can Iron. Address E. S. NORRIS.
May 16, 1849.**Machinery Warehouse.**S. C. HILLS, No. 43 Fulton street, New York, has
constantly for sale Steam Engines, Boilers, Lathes,
Chucks, Drills, Planers, Force and Suction Pumps;
Tenoning, Morticing and Boring Machines, Shingle
Machines, Bolt and Nut Machines, Belting, Oil, Iron
and Lead Pipe; Rubber, Percha and Leather Hose,
&c., &c.S. C. H.'s arrangements with several machine shops
are such that he can supply, at very short notice, large
quantities of machinery.

November 23, 1849.

**George O. Robertson,
BROKER IN SCOTCH AND
AMERICAN PIG IRON;**Bar Iron, Lead, Spelter, Tin, Copper, etc.,
No. 4 Liberty Place, MAIDEN LANE,
(Near Broadway.)
NEW YORK**Manufacture of Patent Wire
ROPE AND CABLES,**For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.**Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—**IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.**Doremus & Harris,
ANALYTICAL & CONSULTING CHEMISTS,
179 BROADWAY, NEW YORK.
SCHOOL OF CHEMISTRY.****IRON.****Railroad Iron.****3,000 TONS C. L. MAKE** 63½ lbs. per yard,
now landing and to arrive.Also contracts made for future delivery of above su-
perior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850. 3m

**SPRING STEEL FOR LOCOMOTIVES, TEN-
DERS AND CARS.**—The subscriber is engaged
in manufacturing spring steel from 1½ to 6 inches in
width, and of any thickness required: large quantities
are yearly furnished for railroad purposes, and wher-
ever used its quality has been approved of. The estab-
lishment being large, can execute orders with great
promptitude, at reasonable prices, and the quality war-
ranted. Address **J. F. WINSLOW, Agent,**
Albany Iron and Nail Works.**Railroad Iron.**THE Undersigned, Agents for Manufacturers, are
prepared to contract to deliver Rails of superior
quality, and of any size or pattern, to any ports of dis-
charge in the United States.**COLLINS, VOSE & CO.,**
74 South St.

New York, June 1, 1850.

Railroad Iron.

1,500 Tons weighing 53 lbs. per lineal yard.

500 " " 57 " " "

500 " " 56 " " "

500 " " 60 & 61 lbs. "

Also 2½x½ flat rails. All the above being of approv-
ed patterns. For sale by**DAVIS, BROOKS, & CO.,**
63 Broad street.N.B.—Rails imported on commission, or at a fixed
price.**Iron.**Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by**COLEMAN, KELTON & CAMBELL,**
109 N. Water St., Philadelphia.**IRONDALE PIG METAL, MANUFACTURED**and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.**Railroad Iron.****2000 Tons,** weighing 53 pounds per lineal yard,
of the most approved pattern of T rails, in
store and to arrive, for sale by**COLLINS, VOSE & CO.,**
74 South St.

New York, June 1, 1850.

Railroad Iron.**1675 Tons,** weighing about 61 lbs. per yard, 90
tons, weighing about 52 lbs. per yard, and
825 tons, weighing about 53½ lbs. per yard, of the lat-
est and most approved patterns of T rail, for sale by**BOORMAN, JOHNSTON & CO.,**
119 Greenwich street.

New York, Feb. 25, 1850.

N.B.—B. J. & Co are also prepared to take con-
tracts for English rails, delivered in any of the Atlan-
tic ports of the United States.**Railroad Iron.**THE UNDERSIGNED, HAVING made arrange-
ments abroad, are prepared to contract for the de-
livery of Foreign rails, of approved brands upon the
most favorable terms.They will also make contracts for American rails,
made at their Trenton works, from Andover Iron, in
whole or in part, as may be agreed upon.They are prepared to furnish Telegraph, Spring and
Market Wire; Braziers and Wire Rods; Rivets and
Merchant Bars to order, all made exclusively from An-
dover Iron. The attention of parties who require Iron
of the very best quality for special purposes, is respect-
fully invited.**COOPER & HEWITT,**
17 Burling Slip, New York.

February 15, 1850.

Glendon Refined Iron.Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for
sale by **GEORGE GARDNER & CO.,**

5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

**PATENT HAMMERED RAILROAD, SHIP &
BOAT SPIKES.**—The Albany Iron Works
have always on hand, of their own manufacture, a
large assortment of Railroad, Ship and Boat Spikes
from 2 to 12 inches in length, and of any form of head.
From the excellence of the material always used in
their manufacture, and their very general use for rail-
roads and other purposes in this country, the manu-
facturers have no hesitation in warranting them fully
equal to the best spikes in market, both as to quality
and appearance. All orders addressed to the subscrib-
ers at the works will be promptly executed.**JOHN F. WINSLOW, Agent.**

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of
Erastus Corning & Co Albany; Merrill & Co., New
York; E. Pratt & Brice, Baltimore, Md**LAP—WELDED
WROUGHT IRON TUBES**

FOR

TUBULAR BOILERS,FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.THE ONLY Tubes of the same quality and man-
ufacture as those so extensively used in England,
Scotland, France and Germany, for Locomotive, Ma-
rine and other Steam Engine Boilers.**THOMAS PROSSER & SON, Patentees,**
23 Platt street, New York.**Railroad Iron.**THE UNDERSIGNED ARE PREPARED TO
contract for the delivery of English Railroad Iron
of favorite brands, during the Spring. They also re-
ceive orders for the importation of Pig, Bar, Sheet, etc.
Iron.**THOMAS B. SANDS & CO.,**
22 South William street,

February 3, 1849.

New York.

Iron Store.THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Philadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 53 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.**MORRIS, JONES & CO.,**

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.

August 16, 1849.

1y33

Railroad Iron.THE MOUNT SAVAGE IRON WORKS, AL-
legany county, Maryland, having recently pass-
ed into the hands of new proprietors, are now prepar-
ed, with increased facilities, to execute orders for any
of the various patterns of Railroad Iron. Communi-
cations addressed to either of the subscribers will have
prompt attention. **J. F. WINSLOW, President**

Troy, N. Y.

ERASTUS CORNING, Albany

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md.

November 6, 1849.

Railroad Iron.THE SUBSCRIBERS ARE PREPARED TO
take orders for Railroad Iron to be made at their
Phoenix Iron Works, situated on the Schuylkill Riv-
er, near this city, and at their Safe Harbor Iron Works,
situated in Lancaster County, on the Susquehanna
river; which two establishments are now turning out
upwards of 1800 tons of finished rails per month.Companies desirous of contracting will be promptly
supplied with rails of any required pattern, and of the
very best quality.**REEVES, BUCK & CO.,**

45 North Water St. Philadelphia,

March 15, 1849.

Monument Foundry.

A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR

IRON FOUNDRY AND MACHINE SHOP

In complete operation, are prepared to execute faithfully and promptly, orders for Locomotive or Stationary Steam Engines, Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills, Slide, Hand or Chuck Lathes, Machinery for cutting all kinds of Gearing, Hydraulic, Tobacco and other Presses, Car and Locomotive patent Ring Wheels, warranted, Bridge and Mill Castings of every description, Gas and Water Pipes of all sizes, warranted, Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete. Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern. Old Machinery Renewed or Repaired—And Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS,
Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by

ICHABOD WASHBURN.

Worcester, Mass., May 25, 1849.

American and Foreign Iron.**FOR SALE,**

300 Tons A 1, Iron Dale Foundry Iron.

100 " 1, " " " "

100 " 2, " " " "

100 " " Forge " "

400 " Wilkesbarre " "

100 " "Roaring Run" Foundry Iron.

300 " Fort " "

50 " Catoctin " "

250 " Chikiswalungo " "

50 " "Columbia" "chilling" iron, a very superior article for car wheels.

75 " "Columbia" refined boiler blooms.

30 " 1 x 1/2 Slit iron.

50 " Best Penna. boiler iron.

50 " "Puddled" " "

50 " Bagnall & Sons refined bar iron.

50 " Common bar iron.

Locomotive and other boiler iron furnished to order.

GOODHUE & CO.,

New York.

64 South street

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,

No 57 South Gay St., Baltimore, Md.,

Offer for sale Hot Blast Charcoal Pig Iron made at the Catoctin (Maryland), and Taylor (Virginia), Furnaces; Cold Blast Charcoal Pig Iron from the Cloverdale and Catawba, Va., Furnaces, suitable for Wheels or Machinery requiring extra strength; also Boiler and Flue Iron from the mills of Edge & Hilles in Delaware, and best quality Boiler Blooms made from Cold Blast Pig Iron at the Shenandoah Works, Va. The productions of the above establishments can always be had at the lowest market price for approved paper.

American Pig Iron of other brands, and Rolled and Hammered Bar Iron furnished at lowest prices. Agents for Watson's Perth Amboy Fire Bricks, and Rich & Cos. New York Salamander Iron Chests. Baltimore, June 14, 1849. 6 mos

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property. Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

6m9

62 Buchanan's Wharf, Baltimore.

Iron.

THE SUBSCRIBERS having resumed the agency of the New-Jersey Iron Company, are prepared to execute orders for the different kinds and sizes of Iron usually made at the works of the company, and offer for sale on advantageous terms—

150 tons No. 1 Boonton Foundry Pig Iron.

100 " No. 2 do. do. do.

300 " Nos. 2 & 3 Forge do. do.

100 " No. 2 Glendon do. do.

140 " Nos. 2 & 3 Lelugh Crane do do.

100 " No. 1 Pompton Charcoal do.

100 " New-Jersey Blooms

50 " New-Jersey Faggoting Iron, for shafts

Best Bars, 1/2 to 4 inch by 1/2 to 1 inch thick.

Do do Rounds and Squares, 1/2 to 3 inch.

Rounds and Squares, 3-16 to 1 inch.

Half Rounds, 1/2 to 1 in. Ovals & Half Ovals 1/2 to 1 1/2 in.

Bands, 1 1/2 to 4 inch. Hoops, 1/2 to 2 inch.

Trunk Hoops, 1/2 to 1 1/2 in. Horse Shoe & Nut Iron.

Nail Plates. Railroad Spikes.

DUDLEY B. FULLER & Co., 139 Greenwich-st. and 85 Broad-st.

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel. Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,**AND**

ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,

100 William St., New York.

November 23 1843.

Railroad Iron.

OF ANY PATTERN AND WEIGHT,

Of a Favorite Brand,

And deliverable in Bond, or Duty paid, at any Port of the U. S., contracted for on favorable terms, by

CHARLES ILLIUS,

20 Beaver St., New York.

Pig and other Iron also contracted for. Sole Agent for "Baxter's Machine and Burning Oil"—particularly adapted for "Railroads" and other Machinery—Preferred to Sperry by the many now using it, and 25 per cent. cheaper.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Ogden & Martin's ROSENDALE CEMENT.

WE are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, sets immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by
OGDEN & MARTIN, 104 Wall st.

February 16, 1850.

The above cement is used in most of the fortifications building by government.

To Steam Engine Builders.

THE Undersigned offer for sale, at less than half its cost, the following new machinery, calculated for an engine of 62 inches cylinder and 10 feet stroke, viz.

2 Wrought Iron Cranks, 60 inches from centre to centre.

1 Do. do. Connecting Rod Strap.

2 Do. do. Crank Pins.

1 Eccentric Strap.

1 Diagonal Link with Brasses.

1 Cast Iron Lever Beam (forked).

The above machinery was made at the West Point Foundry for the U. S. Steamer Missouri, without regard to expense, is all finished complete for putting together, and has never been used. Drawings of the cranks can be seen on application to

HENRY THOMPSON & SON,

No. 57 South Gay St., Baltimore, Md.

Sept. 12, 1849.

8,000 Tons Railroad Iron.

THE OHIO AND PENNSYLVANIA RAILROAD CO. wish to contract for eight thousand tons of Railroad Iron, for the eastern division of their road, extending westward from Pittsburgh. Three thousand tons to be delivered on the Ohio river at Pittsburgh and Beaver, before the close of canal navigation in the present year, 1850; and the remainder in the spring of next year. The rails are to be of the H pattern, in lengths of 20 feet, and are to weigh 60 lbs. per lineal yard. They are to be subject to the inspection of Solomon W. Roberts, Chief Engineer.—For further particulars address the President of the Company at Pittsburgh.

By order of the Board of Directors.

WM. ROBINSON, Jr., President.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets, BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,

No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls. Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address

JAMES ROWLAND,

Pres't. Beaver Meadow Railroad & Coal Co., Philadelphia.

or, **L. CHAMBERLAIN, Secy.**

at Beaver Meadow, Pa.

May 19, 1849. 20tf

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by

E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.

New York, May 19, 1849.

Rosendale Cement.

THE NEWARK AND ROSENDALE LIME AND CEMENT CO. are now manufacturing at their works in NEWARK, N. J., and Ulster county, N. Y., a very superior article of Hydraulic Cement—also Lime Calcine Plaster, etc. Contractors and dealers will find it to their advantage to call or make application before purchasing elsewhere. All communications addressed to the subscriber, at Newark, N. J., will be punctually attended to.

1y*15

HENRY WILDE, Secretary.

Patent India Rubber Steam Packing.

THIS article, made by the subscriber, who alone is authorised to make it, is warranted to stand as high a degree of heat as any that has been or can be made by any person—and is the article which has made the reputation of India Rubber Steam Packing and the demand therefor. A large assortment of all thick nesses requisite for any description of engines, steam pipes, valves, etc., constantly on hand and for sale by the manufacturer and patentee, who will give every information regarding its properties, mode of use, etc. at the warehouse.*

JOHN GREACHEN, JR.,
98 Broadway, opposite Trinity Church.
New York, October, 1849.

Passenger Car Linings.

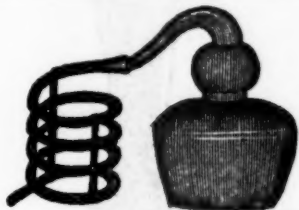
THE Advertiser continues to make to order the Enamelled Car Linings which have been so highly approved the last three years, and are now exclusively used by all the Northern Railroads. No pains are spared to get out new styles, and adapt them to the tastes of every consumer.

Orders addressed to CHARLES STODDER, No. 75 Kilby street, Boston, will have prompt attention.
March 23, 1850. 2m

CAUTION.

RAILROAD COMPANIES and others are hereby cautioned against using or vending our improvement for easing the lateral motion as applied on Railroad Cars. Letters Patent having been granted to us in 1841, any party or parties so making or using said improvement without license from us will be proceeded against according to law.

DAVENPORT & BRIDGES.



P. H. Griffin,

Corner of Steuben and James Sts. Albany, N.Y.
CONTINUES to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.

Orders promptly attended to.

1y14

FOWLER M. RAY'S Patent India-rubber Railroad CAR SPRING.

New York and Erie Railroad Shops.
Piermont, March 26, 1850.

This will certify that from practical experience in the use of Fowler M. Ray's India rubber Car Springs, I believe them to be far superior to any others now in use.

I have never known them to be affected by any change of temperature, as other Rubber Springs have been affected on this road.

I am at the present time repairing a Passenger Car that Mr. Ray and myself mounted with his springs about two years and eight months since.

The springs are at the present time as perfect, to all appearances, as when first applied to the car.

Respectfully yours,

HORACE B. GARDNER,
Foreman of the Car Shops.

Supt. Office N.Y. & H. R.R.,
New York, March 8, 1850.

This is to certify that we have used the Rubber Springs manufactured by Mr. F. M. Ray for the past twenty months, "both for Passenger and Freight Car Springs and Bumpers, and of different sizes," and have in every case given entire satisfaction, and I consider them the best spring now in use.

M. SLOAT, Supt.

Harlem R.R. Depot,
New York, March 7, 1850.

This is to certify that we have used Mr. F. M. Ray's India-rubber Springs for over eighteen months, and find them to be easy and durable, and recommend them to railroad companies as being superior to anything we have tried.

J. M. SMART,
Foreman at 42d St. Depot.

Office New Jersey Railroad Co.,
Jersey City, March 8, 1850.

FOWLER M. RAY, Esq.,

Dear Sir: In answer to your enquiries respecting the operation of the Vulcanised Rubber Springs, purchased by our company from you some two years since. I reply that they are superior to any spring in use, (that I have either seen or heard of).

The improved form of your spring, consisting of a solid piece of vulcanised rubber with bands on the outside, is far superior to your first form, consisting of disks of rubber with metallic plates interposed.

The last named form was tried, if you recollect, at a much earlier period; and then was replaced by your last form.

I have no hesitation in saying that your springs have given entire satisfaction, and most cheerfully recommend them to railroad companies throughout the country for the following reasons:

- 1st. The cost is 30 per cent. less.
- 2d. Saving of weight on each car of 8 wheels from 700 to 800 lbs.
- 3d. Less care and attention is required, as they are not liable to get out of repair.
- 4th. A great saving is secured in the wear and tear of the cars and rails from their great elasticity.
- 5th. The freedom from noise.
- 6th. There is greater safety in case of accident, as they cannot be broken.
- 7th. The comfort of passengers is enhanced sufficiently to pay the expense, waiving all the other reasons that I have given.

Should this fail to satisfy any person enquiring, you are at liberty to refer to me, No. 150 Washington St., Jersey City.

Yours respectfully,

T. L. SMITH, Supt.

New York, March 11, 1850.

I have used the Patent India-rubber Spring purchased of Mr. Ray, upon the cars of the New York and New Haven Railroad, and have found them efficient and economical; and when applied to the axles and draw springs, believe them to be quite equal to any in use. I have found a combination of these springs with a steel spring under the transom beam a very satisfactory arrangement, and am now using this plan in all new cars.

Yours respectfully,
ROBERT SCHUYLER.

February 25, 1850.

From practical observation of the use of the India-rubber Car Springs, manufactured and sold by your company, we are entirely satisfied in their application, and do not hesitate to recommend them as elastic, durable, requiring no repairs for years, and retaining their consistency during all extremes of weather. We have applied them for the past two years, and consider them superior for all railroad purposes.

Yours truly,

OSGOOD BRADLEY, Car Builder, Worcester.
T. & C. WASON, do. Springfield.
DEAN, PACKARD & MILLS, do. do.
DAVENPORT & BRIDGES, do. Cambridgeport.

Office of the New Jersey Railroad Co.,
Jersey City, March 7, 1850.

This is to certify that we have had Mr. F. M. Ray's India-rubber Springs in constant use under our cars, and as Bumper Springs for upwards of two years, and they have in every way given perfect satisfaction.

The present form of spring we deem far superior to the form of Disk, having used both forms, although we have none of those made in Disks at present in use.

We take pleasure in recommending these springs to all railroad companies.

J. P. JACKSON, Vice Prest.
New Jersey Railroad and Trans. Co.

Roxbury, February 28, 1850.

In compliance with your request, I take great pleasure in stating the result of my experience in the use of "Ray's Patented Vulcanised India-rubber Car and Engine Springs." We have used them nearly two years, and never had one fail in any way. The cold weather does not affect them, as it has other rubber springs we have used.

With sixteen years' experience as superintendent of machinery on the Boston and Providence railroad, I take pleasure in saying that your springs are the best we ever used, or I ever saw used elsewhere. We have 20 cars rigged with them, of which I can say that the springs are as good now as when first applied. I put 24 lbs. of the rubber under the forward end of one of our heaviest engines, taking off 250 lbs. of steel springs—it has been in use 18 months, and is in as good condition now as when first put under the engine.

Very respectfully yours,

GEO. S. GRIGGS,
Supt. of Machinery, Boston and Prov. R.R.

Fall River, February 2, 1850.

In answer to yours of the 20th ult. I would say that this company has for some 10 or 12 months past been using "Ray's India-rubber Springs." We have applied them to both passenger and freight cars with uniform success. They have invariably preserved their elasticity and consistency through all the extremes of weather; and we are now applying them whenever the steel spring fails. I am well satisfied that they are particularly adapted for railroad purposes.

Very respectfully yours,

GEO. HAVEN,
Supt. Fall River Railroad.

Jersey City, March 9, 1850.

This is to certify that the present form of Mr. F. M. Ray's India-rubber Car Spring I consider far superior to the form of Disk, having used both forms.

I take pleasure in recommending these springs to all railroad companies.
DAVID H. BAKER,
Foreman of Car Shop of N.J. H.R. & Trans. Co.

Boston, March 5, 1850.

In answer to your enquiry about India-rubber Springs, I have to say that we have used them to a considerable extent on both freight and passenger cars, and also on several of our tenders; and I am very well satisfied that they answer all the purposes for which they are intended. I believe the India-rubber will soon supersede all other springs for cars and tenders.

Yours truly,
S. M. FELTON,

Supt. Fitchburg Railroad.

Old Colony Railroad Office,
Boston, March 6, 1850.

EDWARD CRANE, Esq.,

President New England Car Co.,

Dear Sir: In compliance with your request I would state that the Old Colony Railroad Company have had in use upon their road, India-rubber Springs furnished by your company, for more than eighteen months past, during which time they have been extensively used under Passenger and Freight Cars, Locomotive Tenders, and for Drawer and Buffing Springs, with the most perfect success. The elasticity and consistency of the Rubber has never been unfavorably affected by either extremes of heat or cold—and from the experience which we have had in the use of Rubber Springs, I think them well adapted for railroad purposes—and therefore we have for some months past used Rubber almost exclusively, in all places where springs are required.

Respectfully yours, etc.,

JAS. H. MOORE,
Supt. O. C. Road.

Troy, February 27, 1850.

We have been using your India-rubber Car Springs for nearly two years—and we take pleasure in saying that in our opinion the rubber has to a certain extent already, and may eventually entirely supersede all other Springs for Railroad Car purposes. We now use it entirely for Draw Springs and Bumpers, considering it better and lighter than steel.

During our two years' experience in the use of it, we have not known any to lose their elasticity, or fail in any way; and we cheerfully recommend the rubber for railroad car springs.

Very respectfully,
EATON, GILBERT & CO.

To Practical Machinists.

AN excellent opportunity now occurs to a practical Machinist, of WELL ESTABLISHED REPUTATION, and some capital, to engage extensively in the STEAM ENGINE, BOILER AND FOUNDRY BUSINESS.

An establishment is now ready for business, ample in all its details, including extensive wharf room, for any sized steamboats, and from its position, if properly conducted, will doubtless command a large share of business.

A practical Machinist, as a partner is required, to conduct the whole establishment: and only those FULLY COMPETENT need apply. Address (post paid) "MACHINE CO.," Box No. 741, Philadelphia, Pa. 1m14

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers,

No. 85 Liberty St.

NEW YORK.

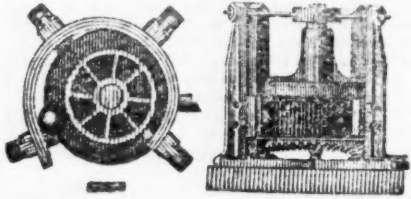
And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

1y

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

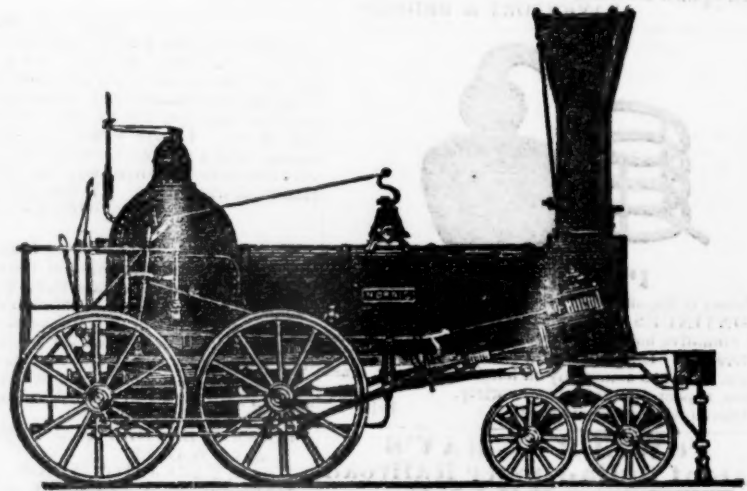
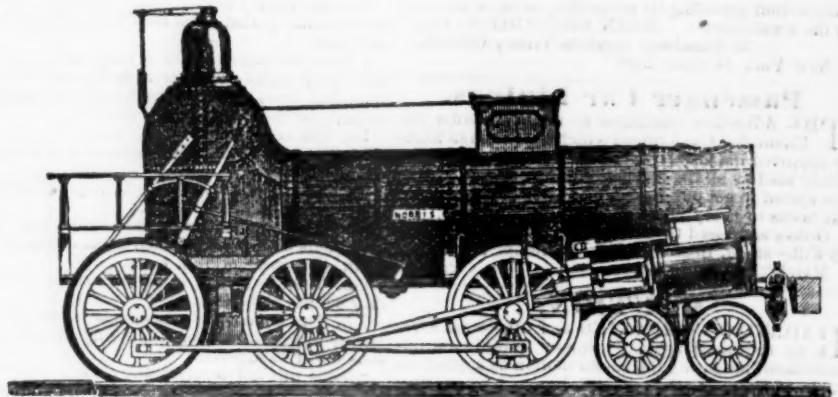
A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED, the Original Inventor of the Plate Wheel with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country.

A. T.
Kensington, Philadelphia Co., }
March 12, 1848.

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Floors, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by

JOHN W. LAWRENCE,
142 Front-street, New York.

Orders for the above will be received and promptly attended to at this office.

32 ly.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

COLUMBUS, OHIO,
Railroad Car Manufactory.
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

1y8

To Inventors and Patentees.

OWEN G. WARREN, ARCHITECT, Has had many years' experience as Agent for obtaining Patents, both in this country and Europe, and will transact such business promptly and reasonably. Persons at a distance can have their business done by correspondence—without the necessity of visiting this city or Washington. Office No. 94 Merchants Exchange, Wall st., corner of Hanover st., up stairs.

1y3

MR. HALE:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Springs upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Good-year, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanized India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most of the other roads terminating in this city."

And yet Mr. Knevit is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.

F. M. RAY, Agent, New York.

Boston, May 8, 1849.

Ballard's Improved JACK-SCREW.

PATENTED.

THE ADVANTAGES OF THIS Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler Makers have them in use—by whom they are highly recommended.

JACK SCREWS, of various sizes, power and price, constantly on hand at the manufactory.

No. 7 Eldridge Street, near Division Street. New York, Jan. 19, 1850.



NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

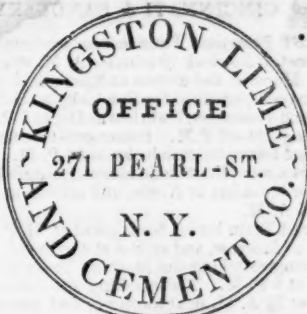
It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS, Reading, Pa.

Hydraulic Cement.



HYDRAULIC CEMENT, OF BEST QUALITY, manufactured at their works, for sale in lots to suit purchasers.

Also, Ground Lime, a superior article for Builders.

ISAAC FRYER, Sec'y.

January 19, 1850.

Engine and Car Works, PORTLAND, MAINE.

THE PORTLAND COMPANY, Incorporated August 8th, 1846, with a capital of \$250,000, have erected their extensive Works upon the deep water of Portland Harbor, and receive and transport, to and from their works direct, to and from vessels of any class.

They now manufacture to order, and deliver upon the Railroads running in each direction from the city, or on shipboard as wanted, Locomotive, Stationary, or Steam Boat Engines; Passenger, Mail, Freight, Earth and Hand Cars; Railway Frogs, Switches, Chairs and Castings; and every other description of Machinery.

HORACE FELTON, Superintendent.

JAMES C. CHURCHILL, General Agent and Clerk.

RAILROADS.

EASTERN RAILROAD.

WINTER ARRANGEMENT.

On and after Monday, October 8, 1849, trains leave Boston daily (Sundays excepted);

For Lynn, 7, 8, 10 a.m., 12, 2, 4, 4, 6, 6, p.m.
Salem, 7, 8, 10 a.m., 12, 2, 4, 4, 6, 6, p.m.
Manchester and Gloucester, 10 a.m., 4 p.m.
Newburyport, 7 a.m., 12, 2, 4, 4, 6, 6, p.m.
Portsmouth, 7 a.m., 2, 4, 4, 6, 6, p.m.
Portland, Me., 7 a.m., 2, 4, 4, 6, 6, p.m.

And for Boston,

From Portland, 8, 10 a.m., 4 p.m.
Portsmouth, 7, 10, 10, a.m., 6, 6, p.m.
Newburyport, 7, 11, 11, a.m., 3, 3, 7, p.m.
Gloucester, 7, 11, a.m., 1, 1, p.m.
Manchester, 8 a.m., 2 p.m.,
Lynn, 7, 8, 8, 9, 9, 10, 10 a.m., 12 55, 2, 2, 4, 4, 8, 8, p.m.
Salem, 7, 8, 8, 9, 9, 10, 10 a.m., 12 40, 2, 2, 4, 4, 8, 8, p.m.

*Or on their arrival from the East.

Freight trains each way daily. Office 17 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ALBANY AND BUFFALO RAILROADS.

Four Trains daily, Sundays excepted, viz:
Leave Albany, 6 a.m., 9 a.m., 2 p.m., 7 p.m.
Reach Buffalo, 15 hours, 18 hours, 23 hours, 18 hours.
Arrive from Buffalo, 7 p.m., 2, 2, a.m., 12, 12, p.m.

Passengers by the Express Train reach Buffalo from New York, and New York from Buffalo, in 24 hours. The Isaac Newton and Oregon connect at Albany with this Train. Baggage cars, with careful baggage masters, run through with all the trains.

For Schenectady, Saratoga Springs & Whitehall, Leave Albany at 7 a.m. and 2 p.m. For Schenectady only at 6, 7 and 9 a.m. and 12, 2 and 7 p.m. For Erie Canal packets at 7 a.m. and 7 p.m. By Plank Road from Schenectady to Saratoga at all hours by stages, etc.

The Eastern Trains leave Albany at 7 a.m. and 3 p.m. The wagons of the company take baggage free between railroads and steamboats at Albany.

E. FOSTER, Jr., Sec'y

Albany and Schenectady Railroad Co. Albany, August, 1849.

BOSTON AND MAINE RAILROAD.

Winter Arrangement, 1850.

Outward Trains from Boston
For Portland at 7 a.m. and 2, 2, p.m.
For Rochester at 7 a.m., 2, 2, p.m.
For Great Falls at 7 a.m., 2, 2, 3, 3, p.m.
For Haverhill at 7 and 9, 9, a.m., 2, 2, 3, 3, 5, 5, p.m.
For Lawrence 7, 7, 9, 9, a.m., 12, 12, 2, 2, 3, 3, 4, 4, 5, 5, p.m.
For Reading 7, 9, 9, a.m., 12, 12, 2, 2, 3, 3, 4, 4, 5, 5, 7, 7, 9, 9, p.m.
For Medford 7, 9, 9, a.m., 12, 12, 2, 2, 3, 3, 5, 5, 6, 6, 9, 9, p.m.
The Station in Boston is on Haymarket Square.
CHAS. MINOT, Super't.

January 10, 1850.

NEW YORK AND HARLEM RAILROAD. NEW ARRANGEMENT.

On and after Wednesday, October 17th, 1849, the Cars will run as follows, (Sundays excepted) until further notice:

Trains will leave the City Hall, New York, for—

Harlem and Morrisania at 6, 8, 10, 11, 12 a.m., 2, 3, 4, 5, 6, 6, p.m.

New Village, at 8, 10, 12 a.m., 3, 5, 6, 6, p.m.

Fordham and Williams' Bridge, at 8, 10, 12 a.m., 2, 3, 4, 5, 6, 6, p.m.

Hunt's Bridge, Underhill's and Hart's Corners, at 8, 10 a.m., 3, 5, 6, 6, p.m.

Tuckahoe and White Plains, at 8, 10 a.m., 2, 3, 4, 5, 6, 6, p.m.

Pleasantville, New Castle, Bedford, Mechanicsville, Purdy's, Croton Falls, and intermediate stations, on signal, 8, 10 a.m., 2, 3, 4, 5, 6, 6, p.m.

Brewster's, Towner's, Patterson, Paulding's, South Dover, Dover Furnace, and Dover Plains, 8, 10 a.m., 2, 3, 4, 5, 6, 6, p.m.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Harlem and Morrisania at 6 08, 7, 8 37, 9, 10 6, 12 a.m., 1 43, 3 07, 3, 5, 5 47 p.m.

New Village, at 5 58, 8 27, 9 56 a.m., 1 33, 2 57, 5 36 p.m.

Fordham and Williams' Bridge at 5, 8 14, 9 43, 10 57 a.m., 1 20, 2 44, 5 24 p.m.

Hunt's Bridge at 8 04, 9 33 a.m., 2 34, 5 16 p.m. On signal.

Underhill's, at 7 56, 9 23 a.m., 2 26, 5 10 p.m. On signal.

Tuckahoe at 7 53, 9 18, 10 40 a.m., 2 23, 5 08 p.m.

Hart's Corners at 7 38, 9 03 a.m., 2 08, 4 54 p.m.—On signal.

White Plains at 7, 8 55, 10 20 a.m., 2, 4 47 p.m.

Davis' Brook at 8 40, 10 11 a.m., On signal. 4 39 p.m. On signal.

Unionville, 8 27, 10 11 a.m. On signal. 4 29 p.m.—On signal.

Pleasantville at 8 20, 9 56 a.m., 4 24 p.m.

Champana, at 8 10, 9 50 a.m. On signal. 4 18 p.m. On signal.

New Castle, at 7 56, 9 38 a.m., 4 07 p.m.

Bedford at 7 46, 9 32 a.m., 4 02 p.m.

Mechanicsville at 7 36, 9 22 a.m., 3 52 p.m.

Golden's Bridge, 7 28, 9 17 a.m. On signal, 3 47 p.m. On signal.

Purdy's at 7 20, 9 09 a.m., 3 39 p.m.

Croton Falls, at 7, 9 04 a.m., 3 34 p.m.

Brewster's, at 8 50 a.m., 3 20 p.m.

Towner's, at 8 35 a.m., 3 05 p.m.

Patterson, at 8 27 a.m., 2 57 p.m.

Paulding's, at 8 17 a.m., 2 47 p.m.

South Dover, 8 02 a.m., 2 32 p.m.

Dover Furnace, 7 55 a.m., 2 25 p.m.

Dover Plains, at 7 45 a.m., 2 15 p.m.

The trains for Harlem and Morrisania leaving City Hall at 6, 8, 10, 11, 12, 2, 4 and 6, returning from Morrisania and Harlem at 6 08, 7, 9, 12, 1 43, 3 07, 3, 5 and 5 o'clock, will land and receive passengers at 27th 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th and 132d streets.

The Dover Plains train from New York at 2, 4 p.m., returning leaving Dover Plains at 7, 9 a.m., will not stop between White Plains and New York, (except at Tuckahoe, Williams' Bridge and Fordham,) unless to leave passengers coming from above Croton Falls.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 27th street.

Freight Trains leave New York at 1 o'clock p.m.—Returning, leaves Dover Plains at 12 o'clock m. For Sunday Arrangements, see hand bills.

M. SLOAT, Sup't.

AMERICAN RAILROAD JOURNAL.

NEW YORK AND ERIE RAILROAD.

CHANGE OF HOURS.

On and after Monday, May 6, 1850, the trains will leave as follows, by steamboat THOMAS POWELL, from the foot of Duane st. daily (Sundays excepted). Breakfast and supper on board the boat.

WAY AND MAIL TRAIN—At 6½ a.m., stopping at all the stations—arriving at Corning and Jefferson about 10½ p.m., and at Buffalo next morning.

NIGHT TRAIN—at 5 p.m., stopping at all the stations and arriving at Geneva in time to connect with the Express train from Albany, and arrive at Buffalo at 7 p.m., next day.

AN EXPRESS TRAIN—Will commence running in a few days, of which due notice will be given.

FREIGHT TRAIN—Leave New York, from foot of Duane st. daily, (Sundays excepted) at 5 p.m. Freight for Geneva, Rochester and Buffalo, forwarded by Express freight train.

CHAS. MINOT, Supt.
New York, May 2, 1850.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.

		Between Augusta and Dalton.	Between Charleston and Dalton.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hoghead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	0 65
	Salt per Liverpool sack	0 18	0 65
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Supt of Transportation.

To Miners and Mining Companies.

THE undersigned would respectfully call the attention of those persons engaged in mineral operations on Lake Superior to the following list of articles which will be sold on accommodating terms, viz:

600 bbls. Corn fed No. 1 Mess Pork.
500 " " Stall fed Mess Beef.
25,000 lbs. " Sugar cured canvassed" Hams.
2,200 " " Dried Beef.
60,000 " " "Kila dried" Corn Meal.
500 bush. White "Field" Beans.
300 " "Canada" Peas.
500 " "Dried Apples.
100 bbls. and half bbls. "cucumber" Pickles.
50 " "Sour Kroust.
30 bush. Onions.
1,000 Beefs' Tongues Smoked and in Pickle.
10,000 lbs. "Mould" Candles.
10,000 " "Hard" Soap.

Also, a full and large supply of all articles that may be required by Mining Companies and those connected with them.

C. A. TROWBRIDGE,
127 Jefferson Avenue, Detroit, Michigan.

LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

CINCINNATI & SANDUSKY.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A. M. Leaves Springfield for Sandusky at 11 50 A. M.

Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P. M. Passengers take tea at Springfield, and leaves for Sandusky at 9½ P. M.

RETURNING—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2½ P. M. Stop for tea at Morrow, and arrives at Cincinnati, at 8½ P. M. Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7½ A. M. next morning, and proceed directly on in the boats.

Passengers for Columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M. Train.

The Ohi Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock, p.m. Train from Cincinnati.

Fare from Cincinnati to Xenia - - - \$1 90
Do do Springfield - - - 2 50
Do do Sandusky City - - - 6 50
Do do Buffalo - - - 10 00
Do do Columbus - - - 4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.
April 1st, 1849.—Fare \$3.

Leave Philadelphia 8½ a.m., and 10 p.m.
Leave Baltimore 9 a.m. and 8 p.m.
Sunday—Leave Philadelphia at 10 p.m.
Baltimore at 8 p.m.

Trains stop at way stations.

Charleston, S. C.
Through tickets Philadelphia to Charleston, \$20.
Pittsburg and Wheeling.
Through ticket, Philadelphia to Pittsburg, \$12.
Wheeling, 13.
Through tickets sold at Philadelphia office only.

Wilmington Accommodation.
Leave Philadelphia at 12 m. 4 and 7 p.m.
Leave Wilmington at 7½ a.m., 4½ and 7 p.m.

Newcastle Line.
Leave Philadelphia at 2½ p.m.—Baltimore at 1½ p.m.
Fare \$3.—Second class, \$2.
N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Supt.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare.

Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at - - - 9 a.m. and 3½ p.m.
Arrive at - - - 9 a.m. and 6½ p.m.
Leave York at - - - 5 a.m. and 3 p.m.
Arrive at - - - 12½ p.m. & 8 p.m.
Leave York for Columbia at - - - 1½ p.m. & 8 a.m.
Leave Columbia for York at - - - 8 a.m. & 2 p.m.

Fare to York - - - \$1 50
" "Wrightsville - - - 2 00
" "Columbia - - - 2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg - - - 99
Or via Lancaster by railroad - - - 10
Through tickets to Harrisburg or Gettysburg in connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owning's Mill, arriving at the Mills at - - - 5½ p.m.
Returning, leaves Owning's Mills at - - - 7 a.m.

D. C. H. BORDLEY, Supt.
Ticket Office, 63 North st.

PHILADELPHIA & READING RAILROAD.

Passenger Train Arrangement for 1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock a.m.

The Train from Philadelphia arrives at Reading at 12 18 m.

The Train from Pottsville arrives at Reading at 10 43 a.m.

Fares.

	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	\$3.50	\$3.00
" " Reading	58	2.25	1.90
" " Pottsville	34	1.40	1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

BALTIMORE AND OHIO RAILROAD AND WASHINGTON BRANCH.

On and after January 1, 1850, Passenger Trains will run as follows:

Leave Baltimore for Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg, Hancock and Cumberland, every morning at 7½ o'clock. This line carries the Great Mail, and connects with Post Coaches at Cumberland, for Wheeling and Pittsburg, over the National Road. Also with the Winchester Trains, at Harper's Ferry. N.B.—Passengers for Pittsburg take the steamers of the Monongahela slack water navigation at Brownsville, only 76 miles from Cumberland.

Leave Baltimore for Ellicott's Mills, Frederick and Harper's Ferry, daily, except Sunday, at 4½ p.m.

Leave Baltimore for Washington City, daily, at 6 a.m. and 5 p.m.—daily, except Sunday, at 9 a.m. The early train connects with the Great Southern Line, via Fredericksburg and Richmond, to Charleston.

Leave Cumberland for Baltimore, etc., at 8½ a.m., daily, connecting with the train from Winchester at Harper's Ferry—with the Evening Train to Washington City, at the Relay House—and with the Evening Train to Philadelphia, at Baltimore. Time for arriving at Baltimore, 5½ p.m.

Leave Harper's Ferry for Baltimore, daily, except Sunday, at 7½ a.m.—taking in Passengers who leave Frederick at 8½ a.m.

Leave Washington for Baltimore, daily, at 6 a.m. & 5½ p.m., and daily, except Sunday, at 9½ a.m. The early train connects at the Relay House with the morning line to Cumberland and the West, and at Baltimore with the day line to Philadelphia and New York.

Through tickets are sold at Philadelphia and Baltimore for Pittsburg and Wheeling, and at Philadelphia and New York for Charleston, S. C., at the following

	To Pittsburg.	Wheeling.	Charleston.
In winter. Summer.	Win. Sum.	Win. Sum.	Win. Sum.
From Philadelphia, \$13	\$12	\$14	\$13
" Baltimore, 11	10	12	11
" New York, .			20

Passengers leaving New York not later than the afternoon line via Newark, etc., reach Baltimore in season to take the next morning's lines to the South and West.

Passengers leaving Cumberland in the morning and Washington in the evening lines, reach Baltimore in season to proceed to Philadelphia by the evening train at 8 p.m.—so as to reach New York before noon the next day.

An Emigrant line by burthen cars, leaves Baltimore every morning, except Sundays, at 4 o'clock—connecting with a line of the previous day from N. York—and at Cumberland with a wagon line to Pittsburg or Brownsville and Wheeling. Fare by this line:

From New York to Pittsburg, \$5 00
" Philadelphia " 6 50
" Baltimore " 5 00

By order, J. T. ENGLAND, Agent.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tusculum Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily - - - \$26 50
Fare through from Charleston to Huntsville, Decatur and Tusculum - - - 22 00

The South Carolina Railroad Co. engage to receive and merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

LAKE SUPERIOR LINE. Cleveland and Detroit,

SAULT STE. MARIE, CARP RIVER, COPPER HARBOR, EAGLE RIVER, ISLE ROYAL, ONTONAGON AND LA POINT.

The Proprietors of this line having added largely to their facilities for transportation on this route, will be prepared to ship Goods to any part of Lake Superior during the coming season, and contract for the delivery of Copper Ore to either Boston, New York, or Pittsburg, being connected with the Troy and Western Line, from Detroit to New York, and a Daily line of Canal Boats

FROM CLEVELAND TO PITTSBURG. Lakes Huron and Erie.

For this portion of the route, the Proprietors are fitting up a large Boat, with a powerful low pressure engine, and a spacious upper cabin, with state rooms, to take the place of the Franklin, which will leave CLEVELAND every Monday Evening at 7 o'clock, and DETROIT every Tuesday Afternoon at 2 o'clock, going to MACKINAW and the BRUCE MINES, and arriving at SAULT STE. MARIE on Thursday morning. The Franklin will leave Detroit every Friday for Mackinaw and Sault Ste. Marie, via the Bruce Mines. For the transportation of heavy masses of Copper, a Propeller will make trips as occasion may require.

Lake Superior.

Mr. McKnight, one of the Proprietors, is constructing a Wharf to the Channel Bank, at the head of the Portage, which will enable them to load their Propellers, NAPOLEON AND INDEPENDENCE, with but 24 hours' detention at Sault Ste. Marie. One of the Propellers will leave every Friday, making a trip through the Lake, touching at Carp River, Ontonagon and Isle Royal.

The great expense incurred in building wharves to facilitate business, it is hoped, will entitle the Proprietors of this Line to Patronage. Goods shipped by either G. WILLIAMS & CO., or S. P. BRADY, Agents, Detroit, will be receipted through to their destination on Lake Superior. Letters addressed to S. McKnight, Detroit, or Sault Ste. Marie, will receive attention. Supplies will be purchased and delivered at any point on Lake Superior, on the best possible terms, and all orders filled with articles of as good quality as the market affords.

Canada Line.

To facilitate the forwarding of Goods for the Canada Companies, a connection has been made with PARK & CO., managing owners of the Propeller Earl Cathcart, forming a direct line from Montreal to the Bruce Mines and Sault Ste. Marie. Goods sent by this line, care of PARK & CO., Amherstburg, or CHAS. HUNT, Esq., Windsor, will be immediately forwarded, and at prices decidedly to the advantage of parties in Toronto or other Canadian Ports.

S. McKnight,
P. B. LIVINGSTON,
J. R. BARBEAU.

January, 1850.

AGENTS.

G. Williams & Co., } Detroit.
S. P. Brady,
P. L. Sternberg & Co., Buffalo.
Charles Hunt, Windsor.
Park & Co., Amherstburg.
W. A. Otis & Co., } Cleveland.
Crawford and Chamberlain,
Rice, Clapp & CO., New York.
W. M. Gorrie, Toronto.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J. The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Patterson, N. J. or 74 Broadway, New York.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190 1/2 miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.

Passenger trains arrive daily at Savannah, 6 15 p.m.

" " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391 1/2 miles in length from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,	\$5 75
" " " Atlanta,	9 50
" " " Augusta,	6 50
" " " Columbus,	15 00
" " " Opelika,	17 00
" " " Jacksonville, Ala.,	20 00
" " " Talladega,	"
" " " Huntsville } Ala.,	22 00
" " " Decatur,	"
" " " Tusculumbia, Ala.,	22 50
" " " Tuscaloosa, Ala.,	"
" " " Columbus, Miss.,	28 00
" " " Aberdeen,	"
" " " Holly Springs,	"
" " " Nashville, Tenn.,	25 00
" " " Murphreesboro,	"
" " " Columbia, do.,	"
" " " Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steam-ships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahassee and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus a distance of 97 miles, or from Griffin through West Point, a distance of 93 miles.

* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423 1/2 miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about \$2.

RATES OF FREIGHT FOR MERCHANDISE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot 13 cents.

Crockery Ware, in crates, boxes or hhds, per cubic foot 10 "

Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs., 50 "

2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs., 45 "

3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs., 40 "

4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb. 30 "

Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "

Oil and molasses per hhd., (smaller casks in proportion) \$6 00 "

Salt per sack not exceeding 4 bushels, 50 "

Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission.

WM. M. WADLEY, Supt.
Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.



No 23 Pear street,
near Third,
below Walnut,
Philadelphia.

GREAT NORTHERN & SOUTHERN MAIL ROUTE. From New York to Charleston, S. C.

daily, via Philadelphia, Baltimore, Washington City, Richmond, Petersburg, Weldon and Wilmington, N. C.

Travellers by this route, leaving New York at 4 1/2 p.m., Philadelphia at 10 p.m., and Baltimore at 6 a.m., proceed without delay at any point on the route, arriving at Richmond, Va., in a day, and at Charleston, S. C., in two and half days from New York.

Through tickets from New York to Charleston, \$20 00

" " " Baltimore to Richmond, 7 00

" " " Petersburg, 7 50

For tickets to Richmond and Petersburg, or further information, apply at the Southern Ticket Office, adjoining the Washington Railroad Ticket Office, Pratt Street, Baltimore.

STOCKTON & FALLS.
October, 1849.

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the

Trains run twice per day between

Montreal and St. Hyacinth, leaving each terminus alternately, until further notice.

Leaving St. Hyacinth at 7 a.m.

" " " 3 p.m.

Leaving Montreal at 10 a.m.

" " " 6 p.m.

THOMAS STEERS, Secretary.
May 31, 1849.

WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA, GA., TO CHATTANOOGA, TENN. 140 Miles.

PASSENGER SCHEDULE.

Leave Chattanooga daily, Sundays excepted, at 8 1/2 a.m.

Arrive at Kingston by 12 m.

" Dalton by 3 p.m.

" Chattanooga by 6 "

Leave Chattanooga daily, Sundays excepted, at 7 a.m.

Arrive at Dalton by 9 1/2 "

" Kingston by 12 m.

" Atlanta by 4 p.m.

The fare is now permanently reduced to three cents per mile for way as well as through Passengers; children and servants two cents per mile.

There are two Railroad routes from Atlanta to the Seaboard, viz: one by the Georgia Railroad to Augusta, and thence to Charleston by the South Carolina Railroad; the other by the Macon and Western Railroad to Macon, and thence to Savannah by the Central Railroad.

At Kingston, 60 miles north of Atlanta, the Rome Railroad branches off to Rome on the Coosa river, which admits of steamboat navigation as far down as Greysport in Ala. Mail stages are in operation from Rome leading towards Tuscaloosa, Ala., Columbus, Miss., Memphis, Tenn., etc.

At Dalton, 100 miles north of Atlanta, a line of stages branches off to Knoxville, Tenn., which will be superseded by the East Tennessee and Georgia Railroad as rapidly as the same is completed.

At Chattanooga a number of steamboats are in successful operation on the Tennessee river, and from that terminus of the road stages run to Nashville, which will be superseded by the Nashville and Chattanooga Railroad as rapidly as the same is completed.

WM. D. FULLTON, Supt. Transp.

Transportation W. & A. R. R.,
Atlanta, March, 1850.

CAR MANUFACTORY CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECTFULLY

call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description; Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

FOWLER M. RAY'S METALLIC INDIA RUBBER CAR SPRINGS.

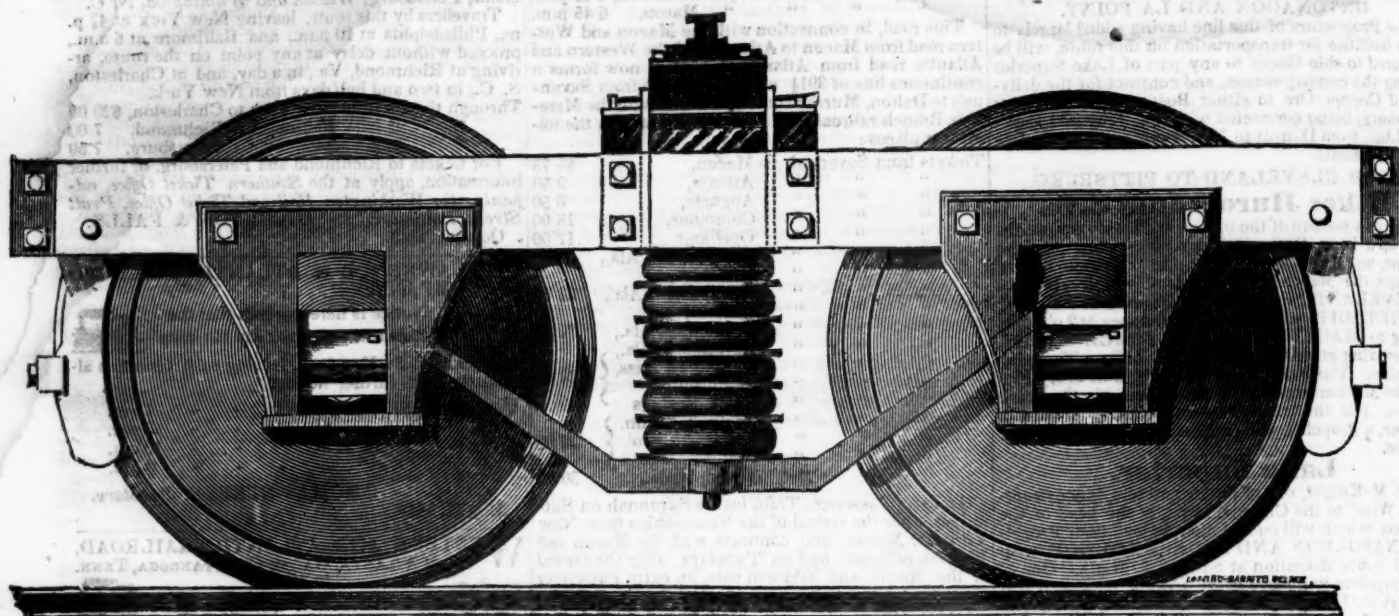


Fig. 1.

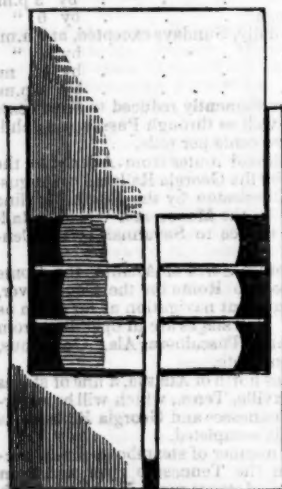


Fig. 2.

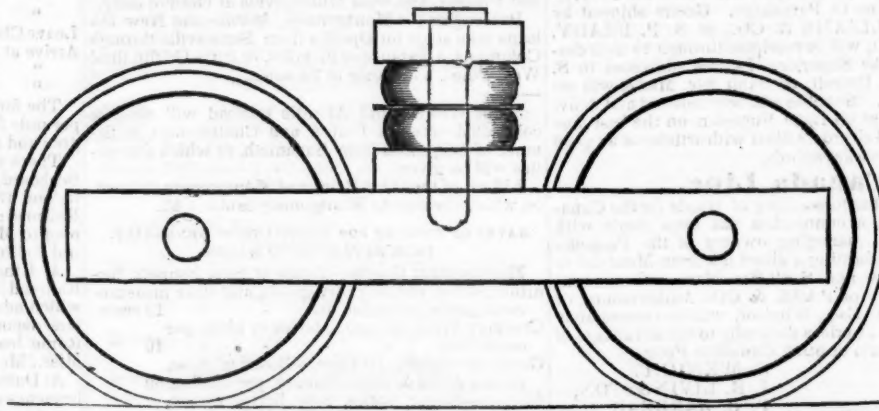


Fig. 3.

So much has been published for the purpose of misleading the public in regard to the inventorship of the India-rubber Railroad Spring, patented in the United States by Mr. W. C. Fuller, that the New England Car Company, proprietors of this invention, have deemed it proper, for the information of Railroad Companies, Car Builders and the public generally, to lay before them the facts upon which they found their claim to this invention, and to a Patent therefor.

Cut No. 1. Represents a cross section of the first model made by Mr. Tucker, under the direction of Mr. Ray, in the summer of 1844, and to which Mr. Tucker, Mr. Bradley and Mr. Bannister testify as being the model marked "B."

Cut No. 2. Represents the model made in 1845, to which Mr. Osgood Bradley and Gen. Thos. W. Harvey have testified.

Cut No. 3. Represents a rough sketch made by Mr. Ray in 1844, which he gave to a man about departing for England to take out some patents, who promised to write to Ray after his arrival in that country—which promise he has probably forgotten.

Mr. W. C. Fuller, of England, patented the above Spring in that country on the 23d October, 1845. He filed his enrollment April 23d, 1846, and on the 22d October, 1846, he took out a patent in the United States under the title, "For Improvement in Railway Carriages," when the improvement consisted in the spring, and not in the carriage.

The reader will perceive by the annexed testimony, that the India-rubber Railroad Car Spring was invented by Mr. Ray about two years previous to the date of Mr. Fuller's enrollment.

The Depositions are omitted for want of room, but will be published in full in the course of a few weeks.

AMERICAN RAILROAD JOURNAL.
PUBLISHED BY J. H. SCHULTZ & CO.
ROOM 12, THIRD FLOOR,
No. 136 Nassau Street,
NEW YORK.

TERMS.—Five Dollars a year, in advance.

RATES OF ADVERTISING.

One page per annum.....	\$200 00
One column ".....	75 00
One square ".....	20 00
One page per month.....	25 00
One column ".....	10 00
One square ".....	3 00
One page, single insertion.....	10 00
One column ".....	4 00
One square ".....	1 50
Professional Cards per annum.....	5 00

LETTERS and COMMUNICATIONS to this Journal may be directed to the Editor,

HENRY V. POOR,
136 NASSAU STREET.